

✓ Comprehensive Sections on
Non-verbal, Verbal and
Logical Reasoning

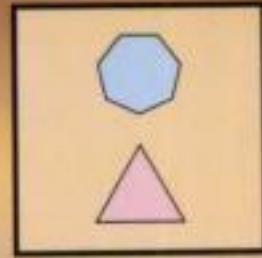
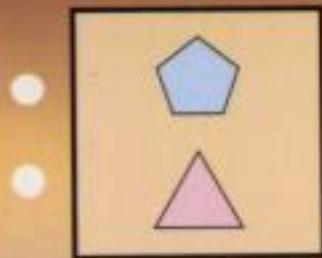
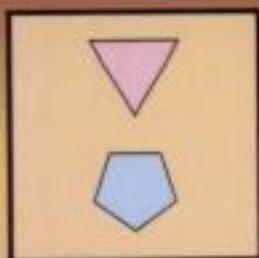
✓ 30 Test Papers with Answers
and Explanations

3

EDITION

TEST OF REASONING

for Competitive Examinations



EDGAR THORPE

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TEST OF REASONING
for
Competitive Examinations
Third Edition

This One



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TEST OF REASONING

for

Competitive Examinations

Third Edition

Late EDGAR THORPE



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NOTE TO THE READER

The first edition of the book was published in 1996. It was entirely the work of late Mr Edgar Thorpe, who passed away on March 13, 1996. Subsequently, his wife (now deceased) late Ms Asha Thorpe had helped us in arranging the second edition which was published in the year 2000.

We are extremely thankful to our valued readers who have received the book well. Their constant encouragement and feedback has paved the way to this new edition. We hope that this new and improved third edition would meet the needs of the readers more closely.

The following changes in this edition have added more value to it:

- (1) Eight mock test papers, based on actual questions in various examinations (based on memory)
- (2) New sections on Quantitative Comparisons, Data Evaluation and Application, and Data Sufficiency

PUBLISHERS

PREFACE TO THE FIRST EDITION

It gives me immense pleasure to present this book, **Test of Reasoning for Competitive Examinations**, though small in size and yet large enough in terms of contents and quality, to young aspirants who are preparing for various competitive examinations.

In almost all competitive examinations there is a paper or section called *Test of Reasoning* or General Intelligence (TR/GI). In some of them like the Bank Probationary Officers' or the Assistant Grade Exam (SSC), the Test of Reasoning has the highest weightage, comprising 75-80 questions, out of a total of 200 questions covering all disciplines. While it is essential to qualify in all the sections, most of the candidates do not make it to the list because they do not prepare adequately for this section.

This book has been compiled after a close scrutiny of previous years' papers of various competitive examinations, and the feedback received from candidates. Further, due importance has been given to the current trend in setting questions. An effort has been made to cover all types of questions that the candidates may face in their examinations. Hints are also provided to tackle them with the requisite speed.

The book covers the syllabi of TR paper set by UPSC, SSC, BSRB, etc. for the following examinations:

- Assistant Grade Examinations (SSC)
- Divisional Accountants/Auditors/UDCs Examination (SSC)
- Inspector of Central Excise/Income Tax Examinations
- SBI/Other Bank Probationary Officers' Examinations
- RBI Officers' Examinations—Grades A and B
- Regional Rural Bank Officers' Examinations
- LIC/GIC AAO Examinations
- Sub-Inspector of Police, Delhi Police, etc. Examinations
- Assistant Commandants/DSP, etc. in BSF/CRPF/ITBP
- SSC Clerical Grade Examinations
- Bank Clerical Examinations—(BSRB)/RBI Examinations
- CDS/NDA Examinations
- SSC Selection Grade Examinations
- Entrance Test: Hotel Management
- Entrance Test: MBA/CAT (IIM)

This book will familiarise candidates with the type of questions they may face in the examination and also provide sufficient practice material.

In compiling this book, I had constantly consulted several books and magazines, and hereby I acknowledge my indebtedness to all those sources.

I wish to put on record my appreciation for the valuable assistance provided by Showick Sumit of University Business School of Management, Punjab University, Chandigarh, who not only reviewed the material but also made great contributions towards the compilation of the book.

I shall remiss, if I fail to mention assistance given by my wife, Ashi, who not only typed the entire manuscript but also spared me from family obligations to devote time on this work.

I am also thankful to the editorial team of my publishers, Tata McGraw-Hill Publishing Co. Ltd. for their thorough in-house review and suggestions for the organisation of the book.

Finally, I wish to express my gratitude to my students, past and present, who have been a constant source of encouragement and help in the preparation of this book. As learning is a constant process, I always consider my readers as my best guides, and therefore, their suggestions and feedback are welcome for the further improvement of successive editions.

EDGAR THORPE

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Section I Introduction

INTELLIGENCE AND REASONING

'Intelligence' is defined as the ability to understand, learn or think things out in a quick and logical manner. Since ancient times intelligence has been regarded as an essential faculty of man, enabling him to manipulate abstract ideas. Intelligence is a direct product of the ability to think and serves as the building block for the conception, formulation and execution of all ideas.

'Reasoning' is defined as the process of drawing conclusions based on facts and evidence after a causal and rational analysis of the problem.

What Comprises Test of Reasoning?

The Test of Reasoning (TR) is a method of measuring mental capacity. It includes a test of the ability to solve problems and arrive at answers and solutions in a logical way. The TR for competitive exams comprises of tests to measure the intelligence and reasoning abilities of a candidate and thereby, determine his mental capacity.

Syllabi for TR section

There are no specific syllabi for the TR section as such, but in general, as described in booklets provided with the admission forms by various examination bodies, the TR section, comprises, of the following:

Booklet for ASSISTANT GRADE EXAM (SCC)

Questions in this test are both non-verbal and verbal type. Of the 80 questions, 25 are of non-verbal type, based on classification, analogy, series, etc. The remaining are of verbal type based on letter number series, letter number and word analogy, number letter word classification, coding and decoding, problem solving, finding the rule, spatial orientation, space visualisation, and conclusion/syllogistic reasoning.

Similarly, for INSPECTOR OF CENTRAL EXCISE AND INCOME TAX EXAM:

Questions in this test are verbal as well as non-verbal type. The test includes questions on analogies, similarities and differences, space visualisation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning, verbal and figure classifications, series, etc. In addition, the questions are designed to test your ability to deal with abstract ideas, symbols and their relationships, arithmetical computations and other analytic functions.

2 Test of Reasoning for Competitive Examinations

Emphasis on TR Section

Given below is the current emphasis given on TR section in various competitive exams:

Examination	Total No. of Questions	No. of TR Questions
1. Assistant Grade (SSC)	400	100
2. Inspector of Central Excise/IT, etc.	200	80
3. Divisional Accountants/Auditors/UDC, etc.	200	80
4. Bank Probationary Officers/SBI/others	200	50
5. Clerical Grade (SSC/BSRB)	200	50
6. Railway Board	200	50
7. Hotel Management Entrance	200	50

There are many other competitive examinations in which the highest weightage is given to the TR section. It is essential, therefore, to prepare for this section as exhaustively as possible.

Success Plan

In order to succeed in your examination, attempt questions of all sections, including TR. Then answer only those questions, in the first instance, which you find simpler and are quicker to answer. Whether the questions are easy or difficult, each question carries equal marks (usually two marks each). So, your target should be to answer the maximum number of questions in the minimum possible time.

It is therefore advisable not to spend too much time on any particular question at the cost of others. You need not worry if you have not been able to attempt all the questions in the first instance. You will have time to attempt the difficult questions, (which you had left unattempted earlier), after answering the easy ones, because the easy questions would normally take lesser time, and you can devote any extra time to work out difficult questions.

Time Factor

Time is a crucial factor to succeed in competitive examinations. In most of the tests, you will find either 200 questions to be answered in 120 minutes or 300 questions to be answered in 180 minutes, covering four sections (disciplines), including the Test of Reasoning. Therefore, allotting time for each section is very important to succeed in the examination.

In case there are 80 questions on TR, out of a total of 200 questions, you should earmark 48 minutes for the TR section and $24 \text{ minutes} \times 3 = 72 \text{ minutes}$ to other sections of your test paper. You should in no way take more than 30-35 seconds to answer one question. There will be questions, which can be answered in just 5 to 8 seconds and some may take even more than a minute. So you should budget your time schedule accordingly.

Some Advice to Users

This book contains sample questions under each classification and thereafter some practice material is provided. To get the maximum benefit, keep the following in mind while going through this book:

- Carefully read the sample question under each classification and understand the method suggested to tackle them.
- Once you have understood the sample question, attempt the practice tests as advised under:

You need just an hour to take each test. It would be better to do it when you are well at ease, and have a clear head to think logically. Choose a quiet spot where you are not likely to be disturbed. Have a pencil and paper at your side.
- Your target should be to answer 20 questions in less than 15 minutes; on an average take less than a minute per question.
- Never get stuck on a particular question. Move onto the next one if you begin to dry up. Avoid, at all times, jumping from one question to another. Answer the questions in order. Do not give up one particular question too quickly hoping that the following ones would be easier. Therefore, devote at least 50 seconds on a difficult question.
- Force yourself to answer the maximum number of questions in the shortest possible time. It is extremely difficult, but not impossible, to give the correct answers to all questions in the given time limit. Do not worry if, at the end of the given time, you have not been able to provide all the answers.
- Get an alarm clock or stopwatch to prevent yourself from worrying about time.
- Do not use a break between tests as an opportunity to check your answers. You will only doubt whether they are correct and these doubts would be detrimental to the next practice test.
- Do not guess your answers while attempting practice tests. Guessing may be done in the actual examination as the last resort, if there is no negative marking.
- Needless to say, but perhaps it is better to mention: *don't cheat*. Do not jump pages or stages; wait until you have answered all the questions given in a test paper before looking at the solutions.
- Once you have completed the entire test paper, check the answers. For questions which you had left unattempted, read the explanations and understand the method for solving them.

Section

2

Non-Verbal Reasoning Tests

INTRODUCTION

Non-verbal reasoning tests consist of those tests in which words, figures, digits and letters are seldom used. The instructions or directions given before the questions need careful understanding. In these tests, your power of logical reasoning, speed of thinking and the ability to differentiate or find correlations between given objects/figures/patterns will be tested. Non-verbal tests make use of diagrams, figures or designs to evaluate your mental ability, speed of reasoning and differentiation, etc., rather than academic knowledge. Most non-verbal reasoning tests can be classified under the following categories:

1. Completion of series
2. Classification of figures or spotting the odd one out from a set of figures
3. Classification of given figures/designs/patterns into identical groups
4. Pattern completion and pattern comparison
5. Spotting hidden pattern in a given design
6. Problems related to figure rotation
7. Problems related to paper cutting and paper folding

In addition, there are questions to judge your ability to identify various factors in a given set of figures, designs or diagrams.

This book gives illustrations of the various types of non-verbal reasoning tests, as have appeared in recent examinations. You will also find guidelines for attempting such non-verbal reasoning tests in the shortest possible time, along with numerous practice tests. These will fully familiarise you with the type of questions you are likely to face in various competitive examinations.

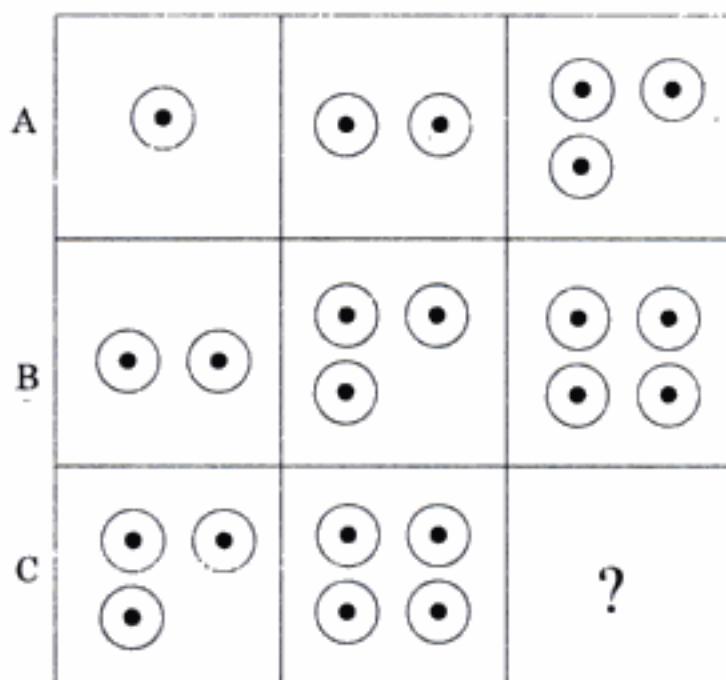
TYPE 1: COMPLETION OF SERIES (SEQUENCE/ORDER)

The word *sequence* is defined as *anything that follows to form a specific pattern or as continuation of a given pattern or sequence*. In simple terms, after observing the trend of pattern involved in three or four items (figures/designs), you have to decide which will be the next figure to complete the given series.

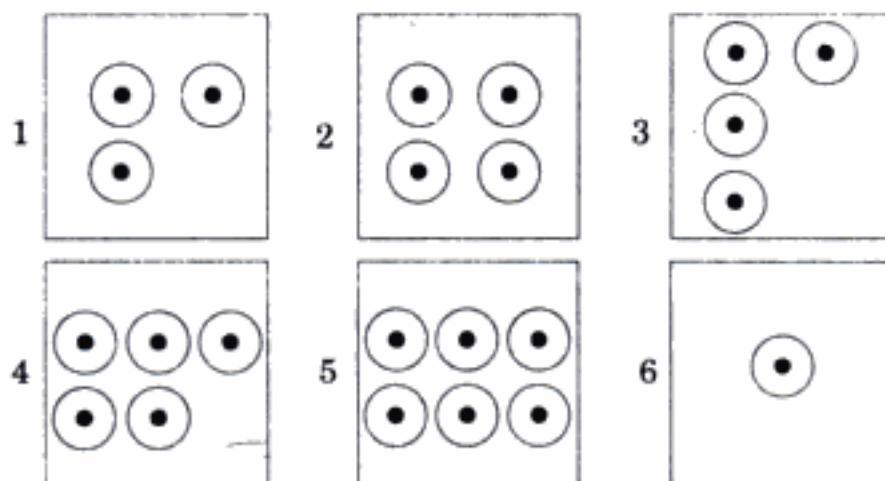
Illustrations

Directions: In the following questions, there are three blocks of figures marked A, B and C, each having three designs. One column in the block is blank with a question mark (?) in it. Following it there are answer choices, marked 1, 2, 3, 4, 5, and 6. Select an appropriate figure from the answer choices provided to replace the question mark and continue the pattern.

- Select the correct figure from the six numbered figures to replace the question mark (?).



Answer Choice

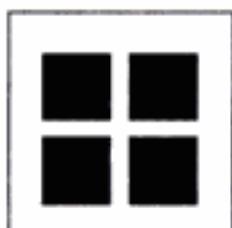


ANSWER: 4 Number of circles increases by one each time.

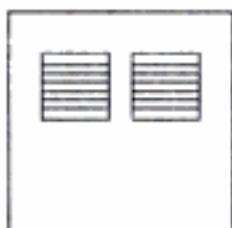
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2. Select the correct figure from the six numbered figures to replace the question mark (?).

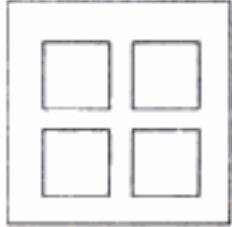
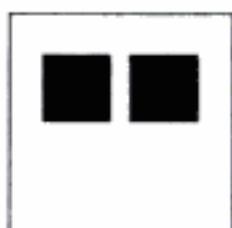
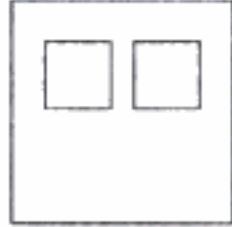
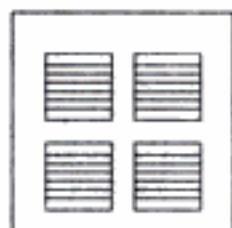
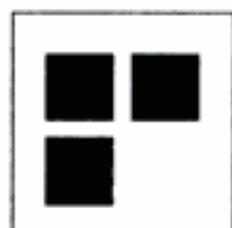
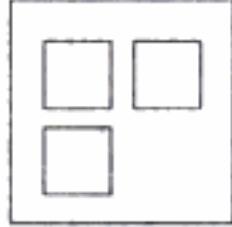
A



B

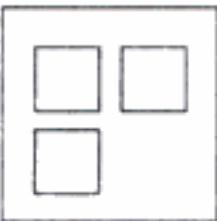


C

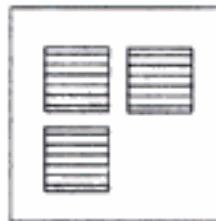


Answer Choice

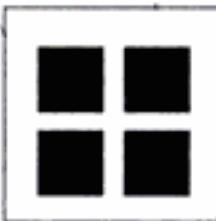
1



2



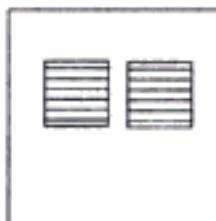
3



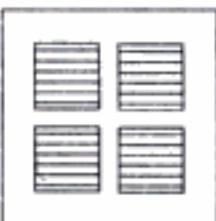
4



5

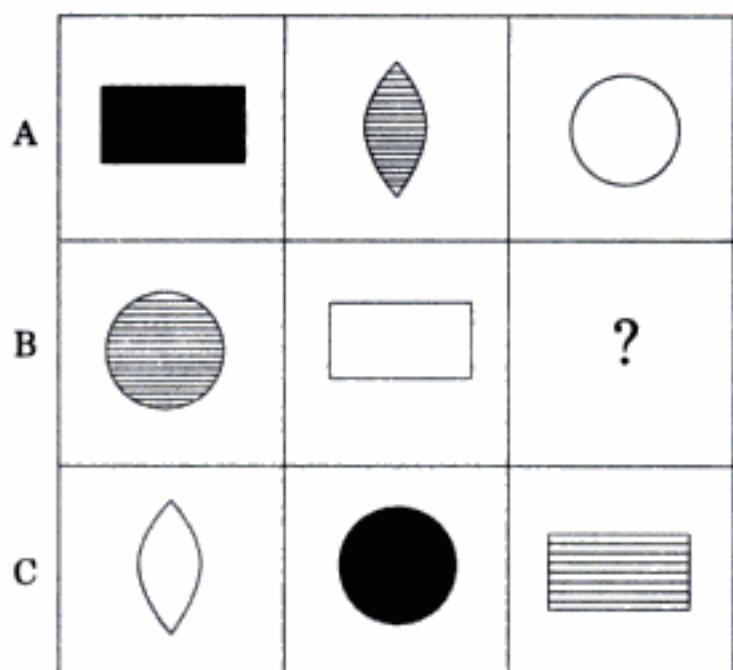
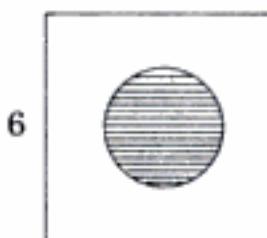
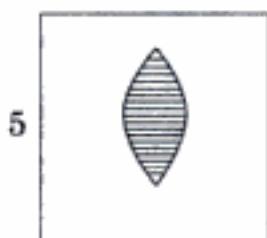
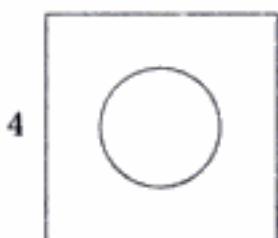
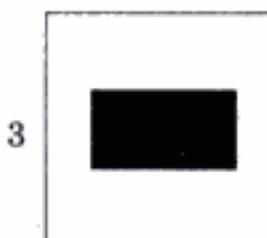
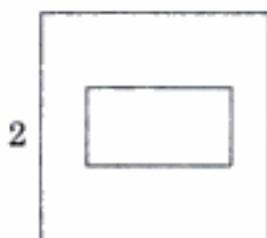
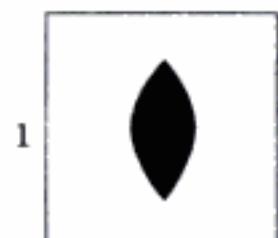


6



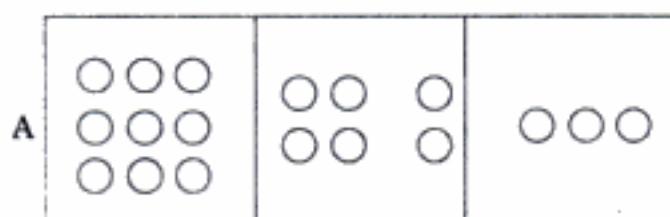
ANSWER: 2 There are three types of small squares in each of the large squares. One set has shaded squares. The second set has horizontal lines in each small square. In the third set, the squares are blank. To keep the pattern followed in other squares, answer figure 2 will replace the question mark.

3. Select the correct figure from the six numbered figures to replace the question mark (?).

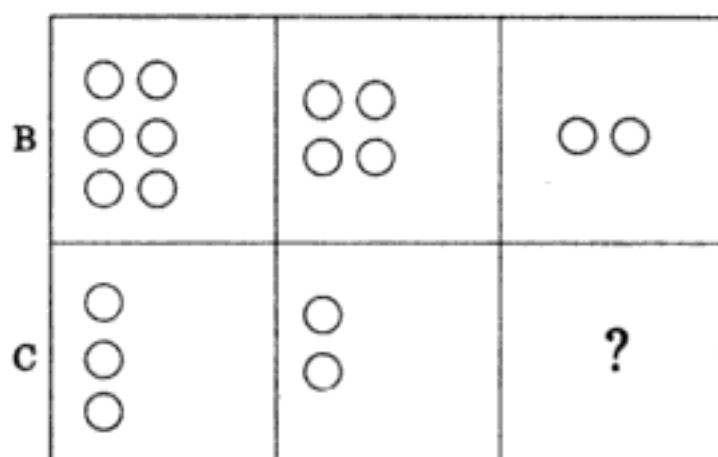
*Answer Choice*

ANSWER: 1 In each row, there are three different figures. Every row has one black-shaded figure A, one blank figure and one figure shaded by horizontal lines. One type of figure occurs only once in a row. Keeping this pattern, the question mark (?) will be replaced by the answer figure 1.

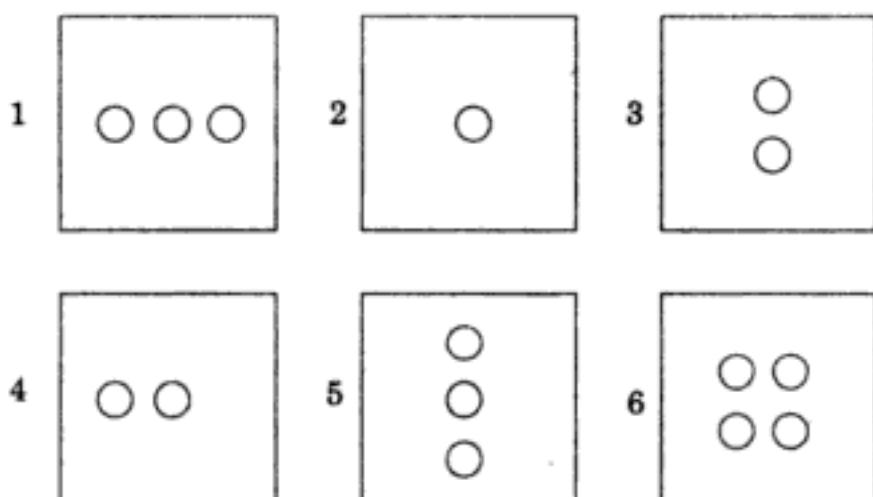
4. Which one of the numbered figures will go in place of the question mark (?).



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Answer Choice

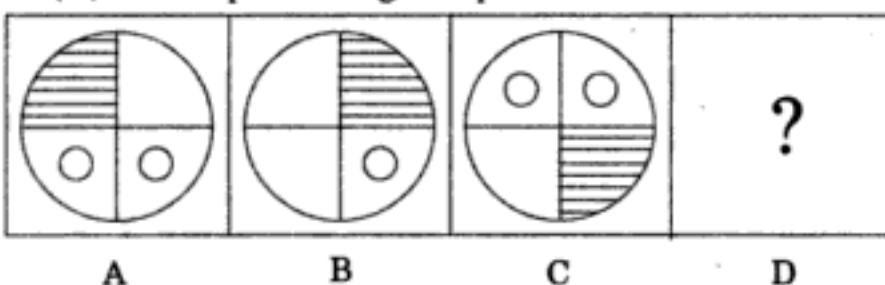


ANSWER: 2 Each row of figures starts with one circle less than the previous row. Also, across a row, the number of circles decreases by one.

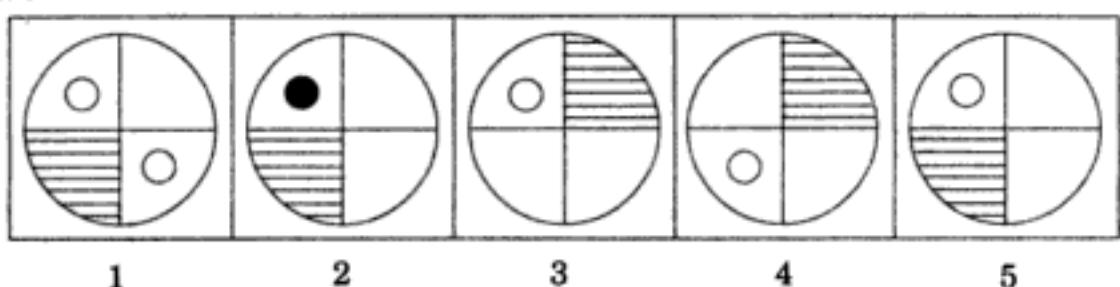
In each row, the number of circles are reducing, e.g.

Row A: 9 → 6 → 3; Row B: 6 → 4 → 2; Row C: 3 → 2 → 1

5. Select the numbered figure that will replace the question mark (?) in figure (D) to complete the given pattern.



Answer Choice

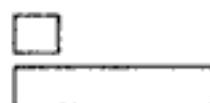


ANSWER: 5 In each figure, the number of small circles varies between one and two alternately. The small circles also move in an anticlockwise direction. The shaded area moves in the clockwise direction. The answer figure 5 follows the same pattern and will come in place of the question mark.

6. Select the numbered figure that will replace the question mark (?) and continue the pattern.



A



B



C

?

D

Answer Choice

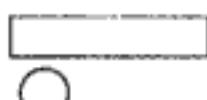
1



2



3



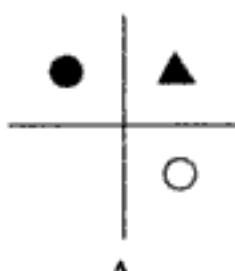
4



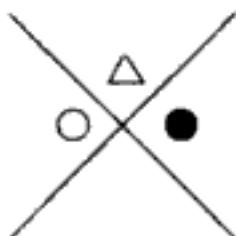
5

ANSWER: 3 The figure rotates 90° anticlockwise. A small circle alternates with a small square at the same relative position.

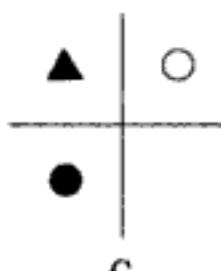
7. Select the numbered figure that will replace the question mark (?) and continue the series.



A



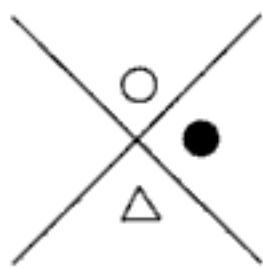
B



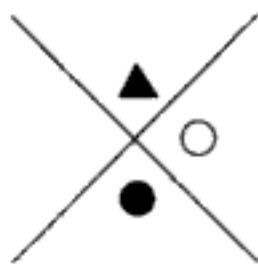
C

?

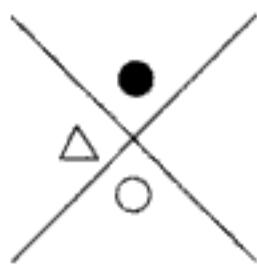
D

Answer Choice

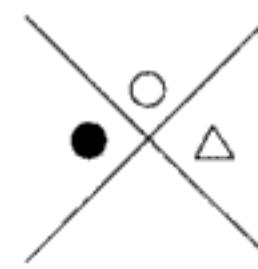
1



2



3

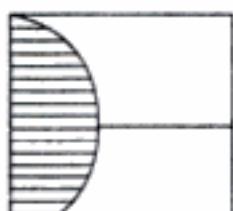


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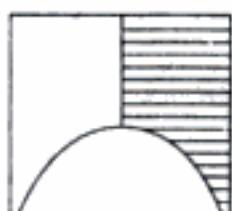
ANSWER: 3 The pattern is rotating 45° anticlockwise to produce the next diagram. Triangles and circles alternate between black and white.

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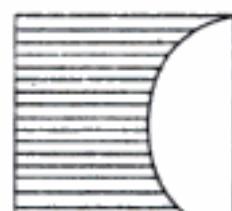
8. Select the numbered figure that will continue the series.



A



B

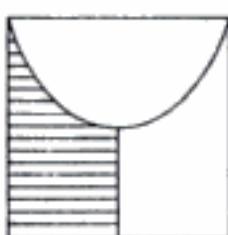


C

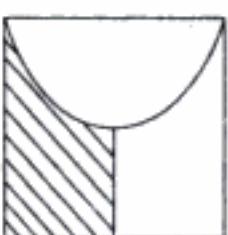
?

D

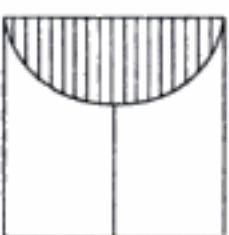
Answer Choice



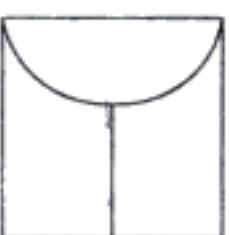
1



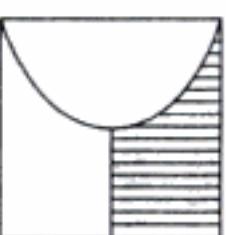
2



3



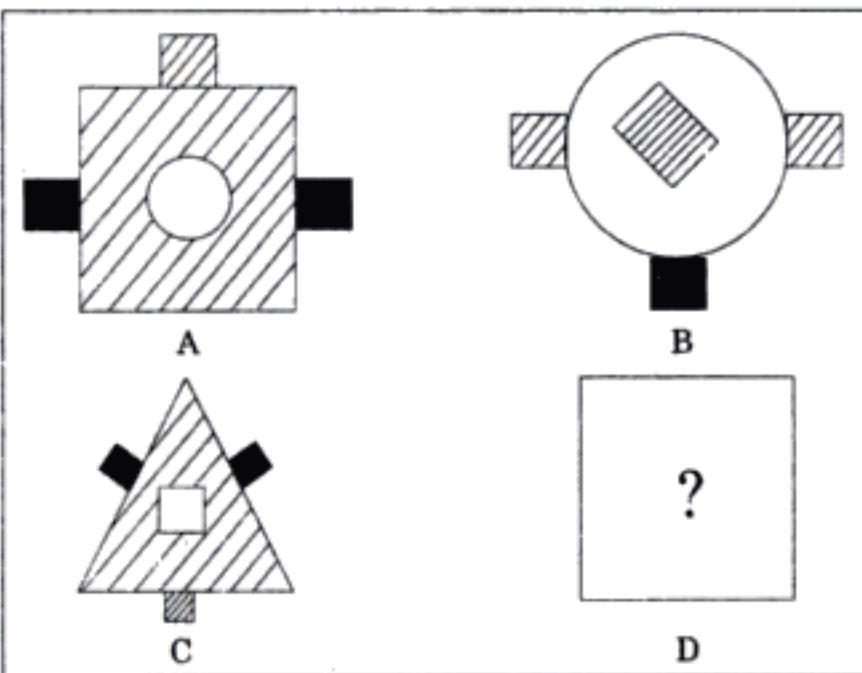
4

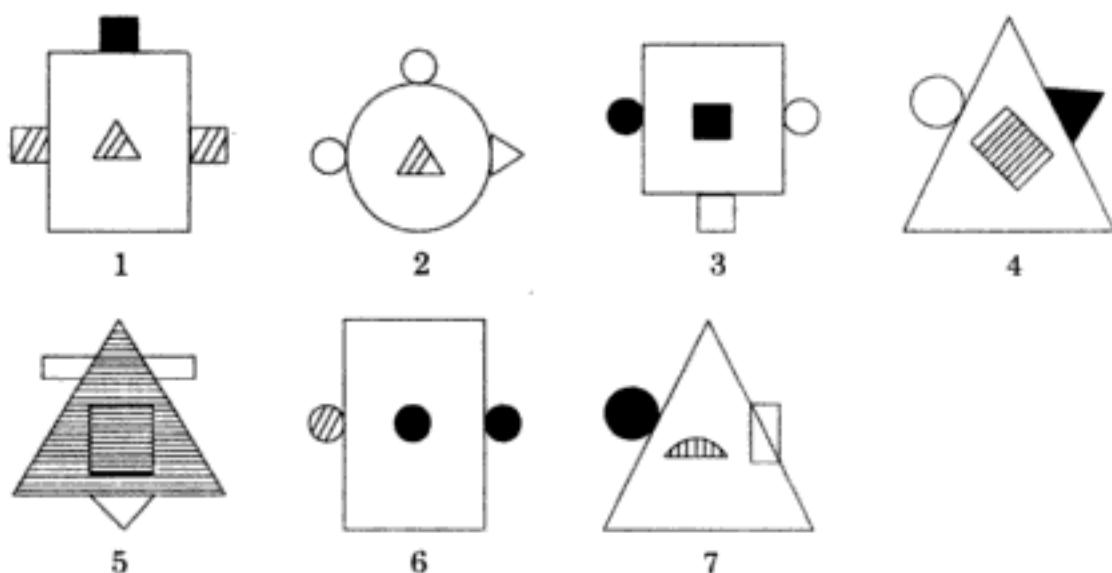


5

ANSWER: 5 The box is rotated 90° anticlockwise to produce the next figure. The shaded (lined) region in the box varies between left, right, down and up positions.

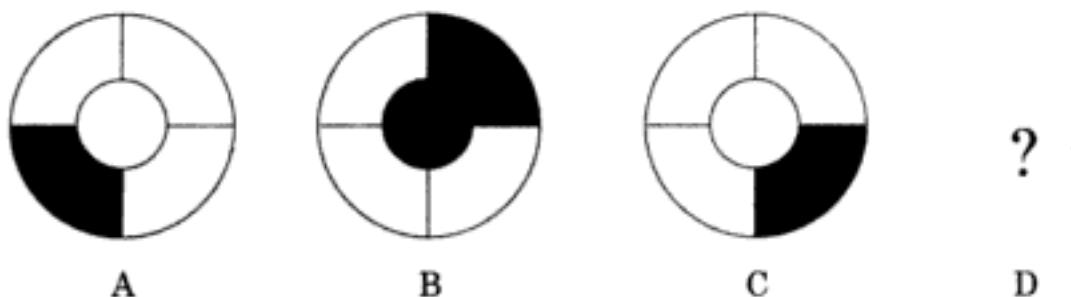
9. Select the numbered figure that will complete the sequence.



Answer Choice

ANSWER: 1 The circle in the square becomes a square in a circle, each of the two shapes retaining their initial colours. The double squares, however, change colour, and the single square changes both position and colour.

10. Select the numbered figure that will come in lettered figure D to continue the sequence.

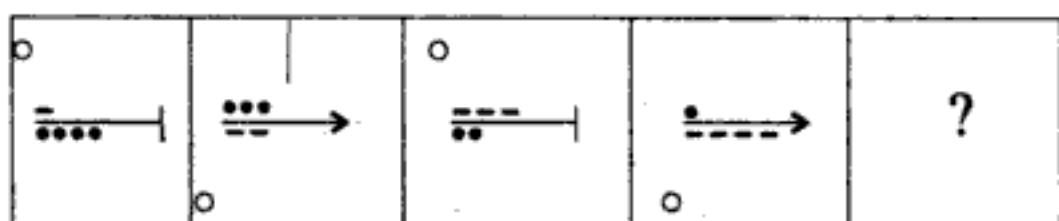
*Answer Choice*

ANSWER: 4 The centre is alternately black and white. The black sector in B is opposite to that in A, so the black sector in D must be opposite to that in C.

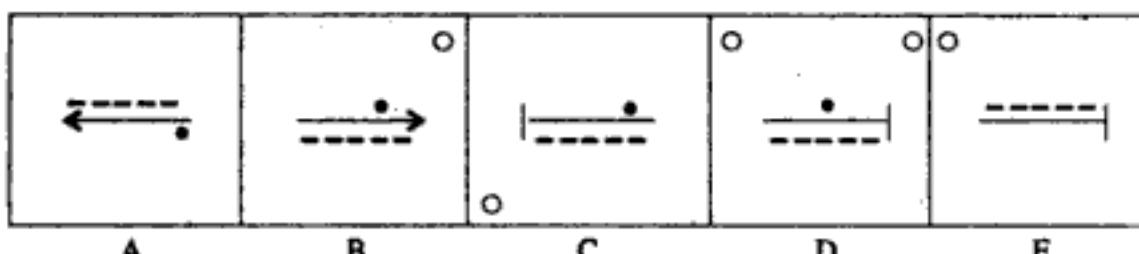
Practice Questions

Directions: Complete the series

1. Problem Figures

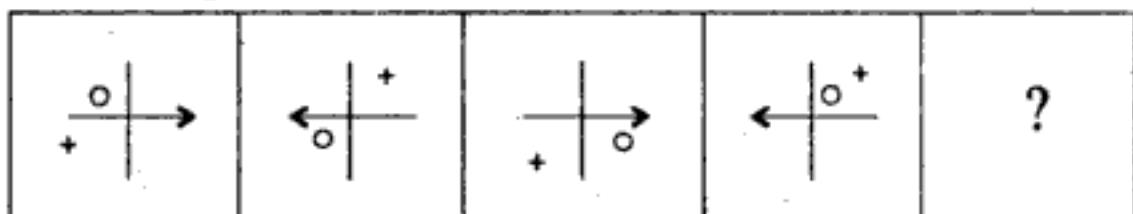


Answer Figures

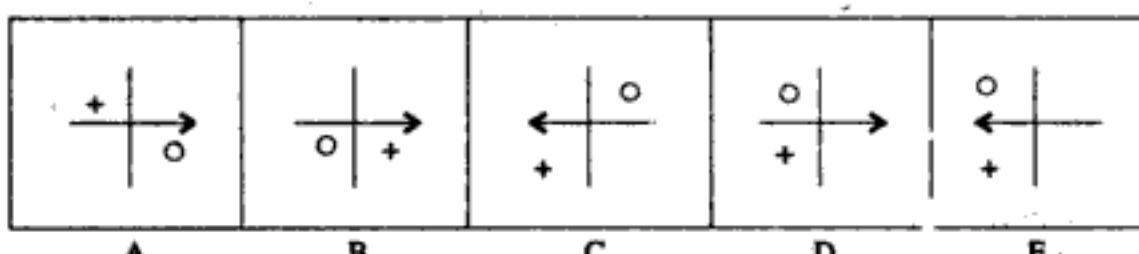


A B C D E

2. Problem Figures

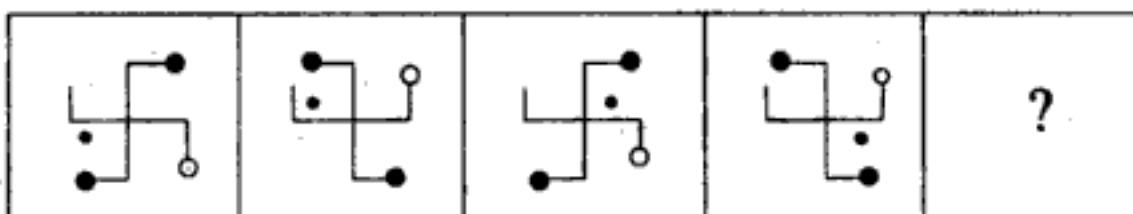


Answer Figures

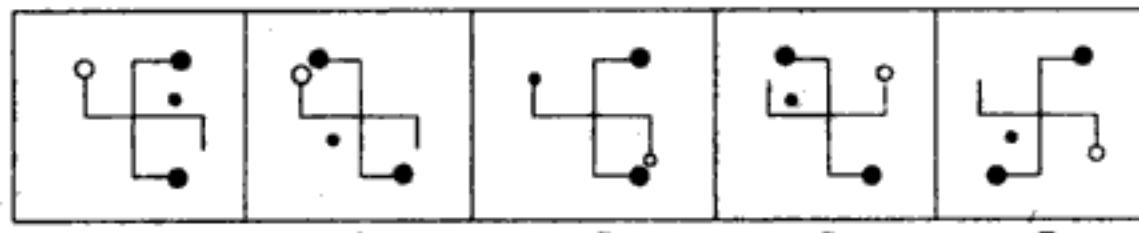


A B C D E

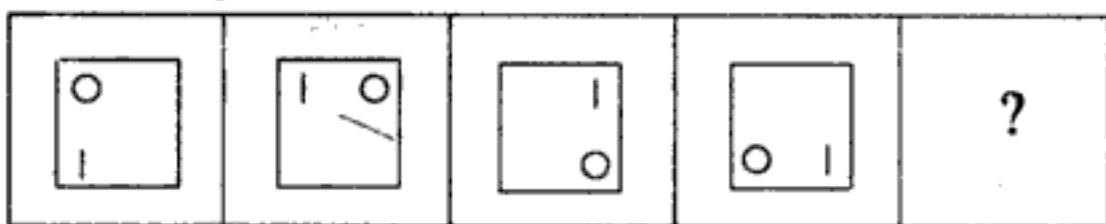
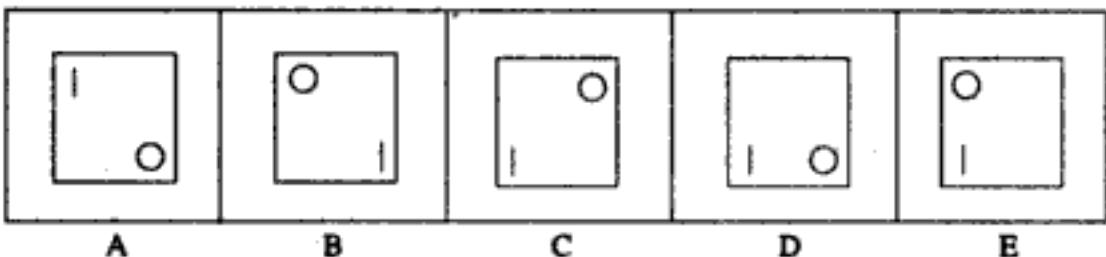
3. Problem Figures



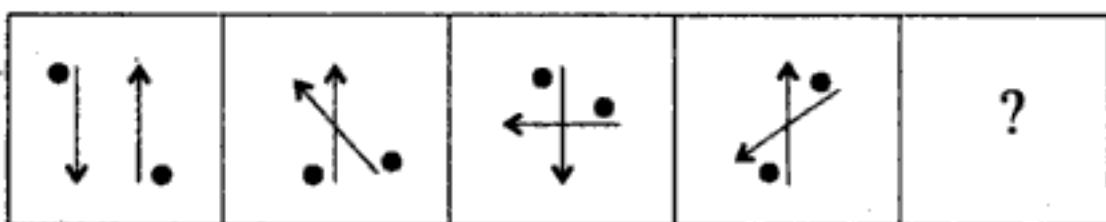
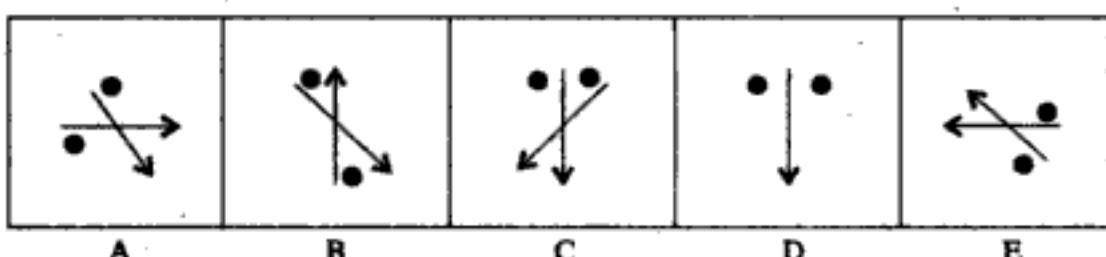
Answer Figures



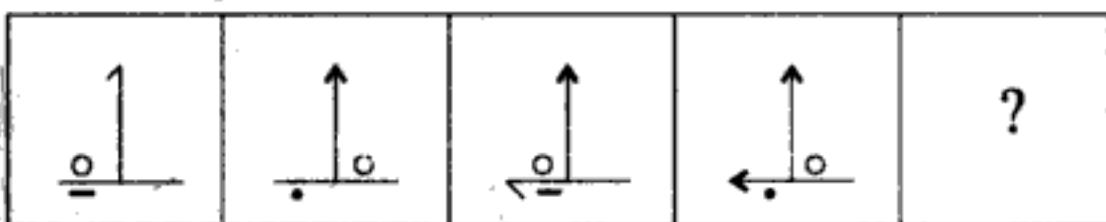
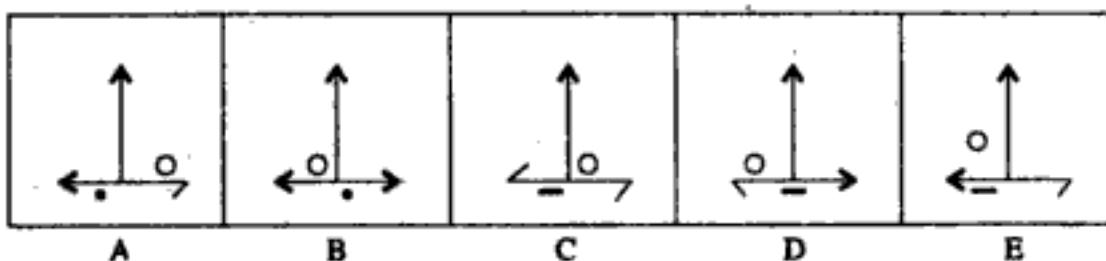
A B C D E

4. Problem Figures**Answer Figures**

A B C D E

5. Problem Figures**Answer Figures**

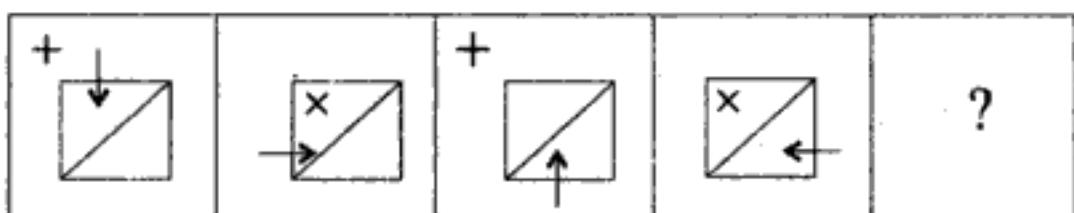
A B C D E

6. Problem Figures**Answer Figures**

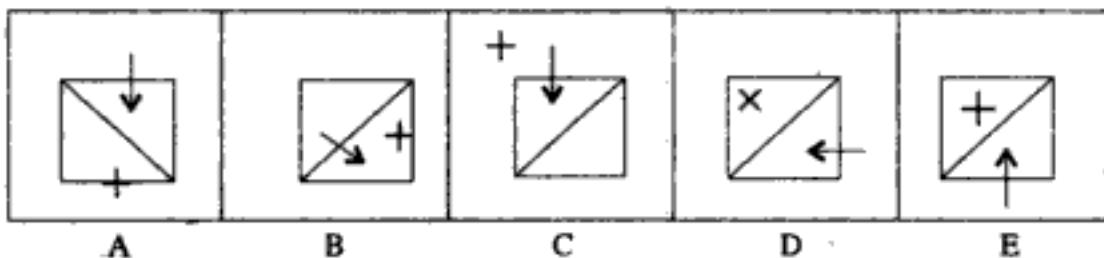
A B C D E

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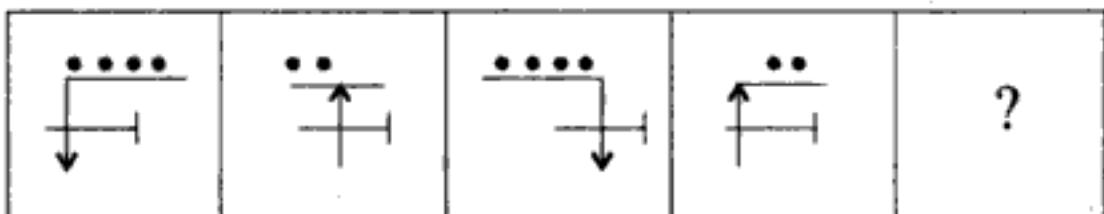
7. Problem Figures



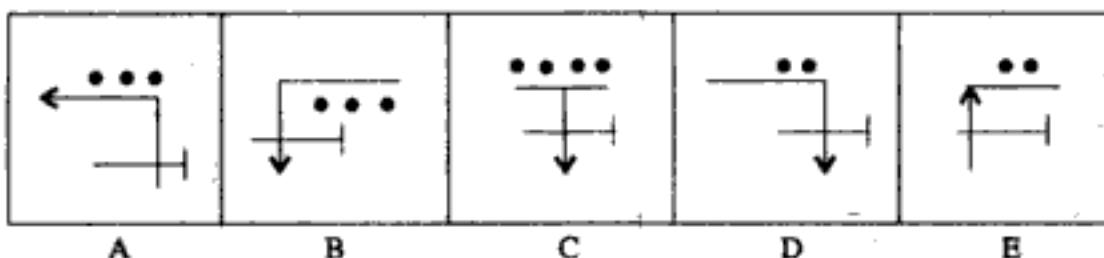
Answer Figures



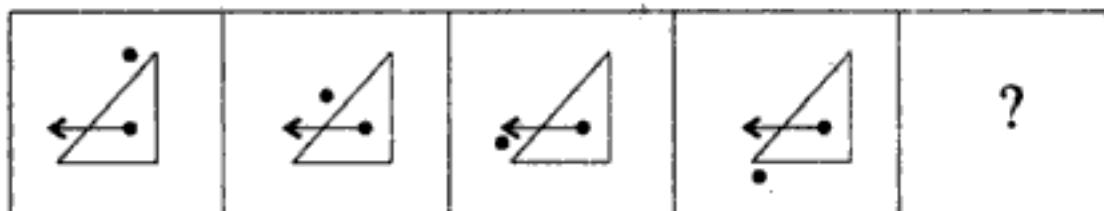
8. Problem Figures



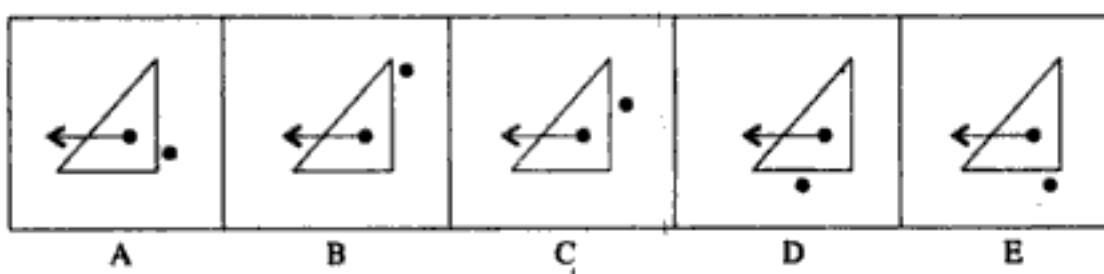
Answer Figures

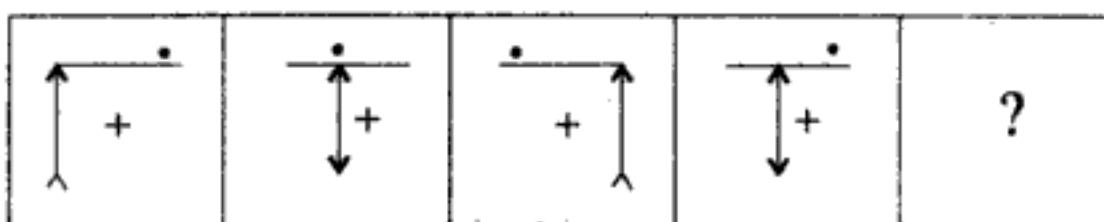
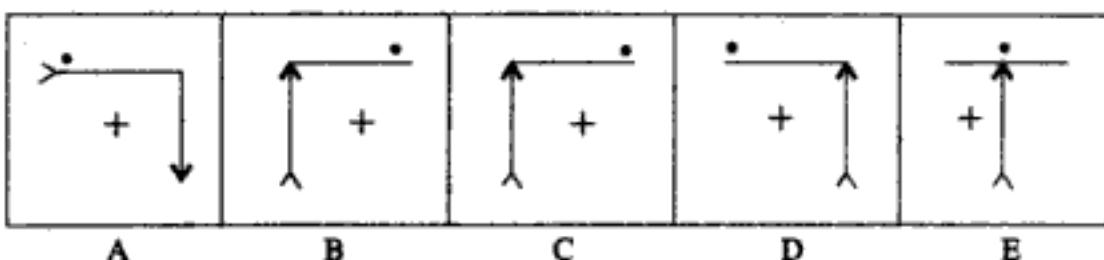
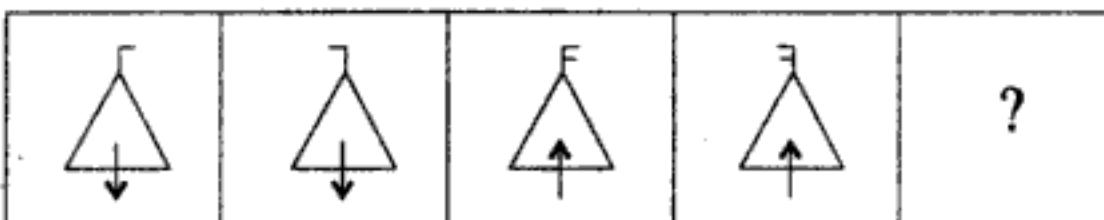
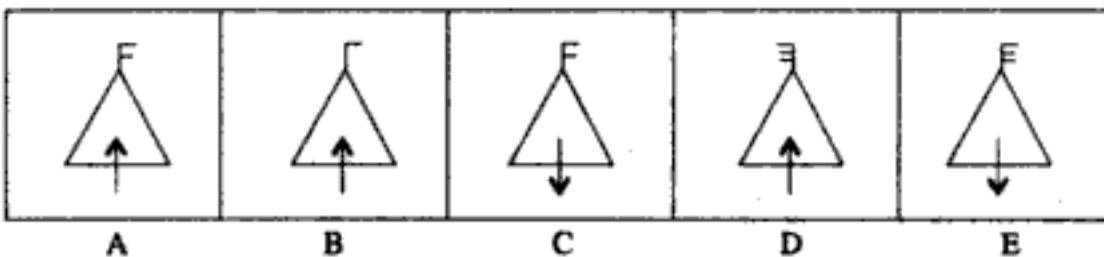
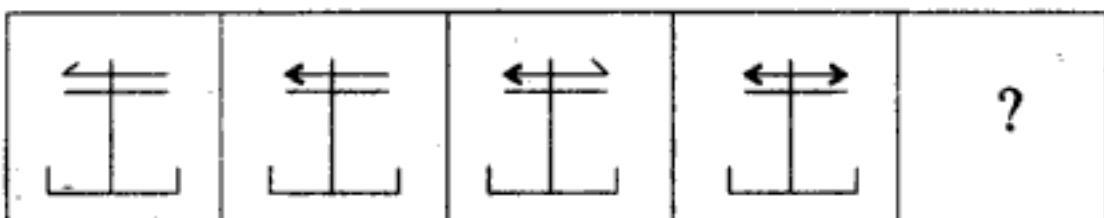
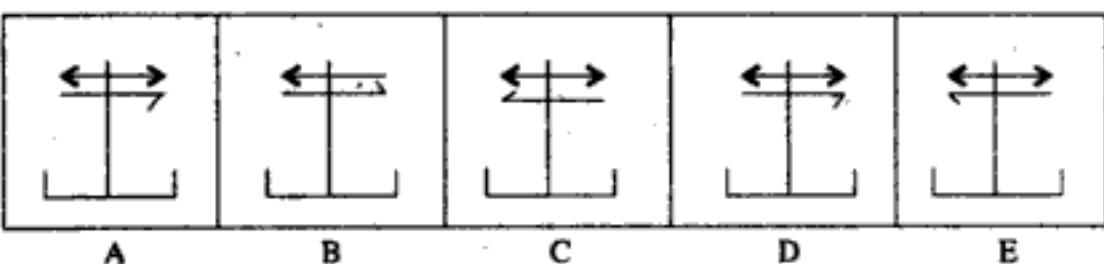


9. Problem Figures



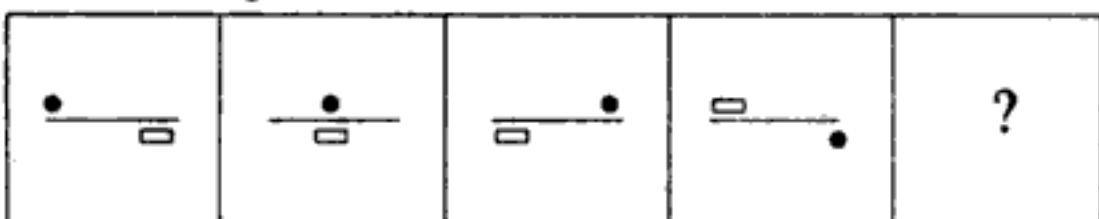
Answer Figures



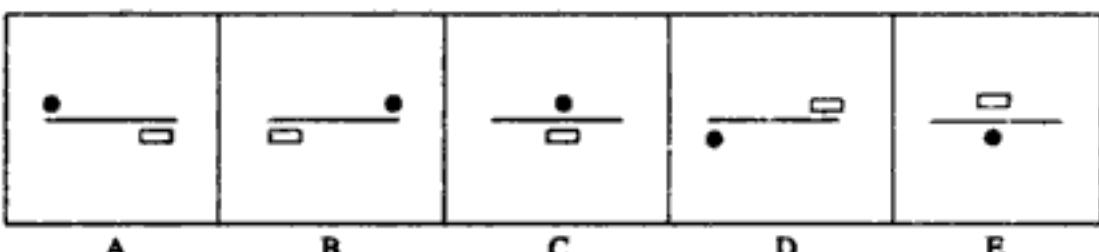
10. Problem Figures**Answer Figures****11. Problem Figures****Answer Figures****12. Problem Figures****Answer Figures**

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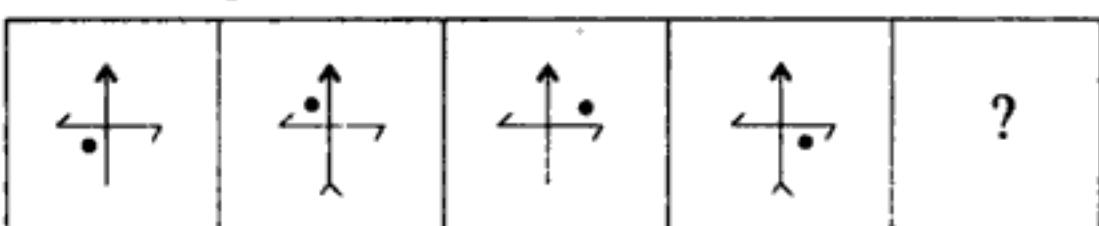
13. Problem Figures



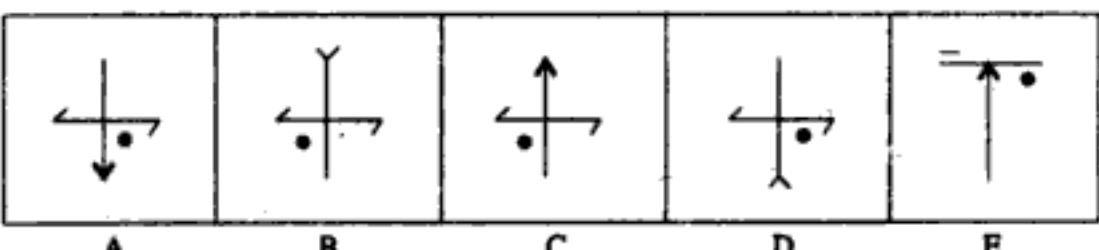
Answer Figures



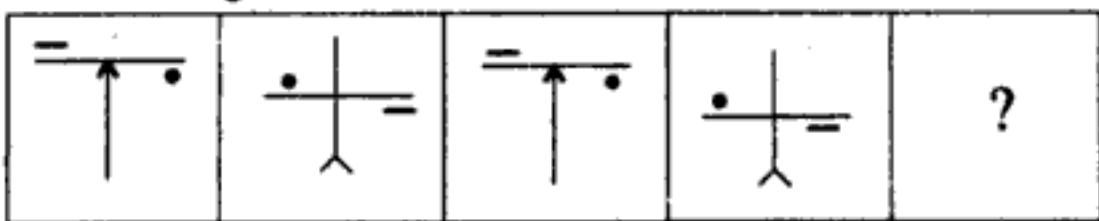
14. Problem Figures



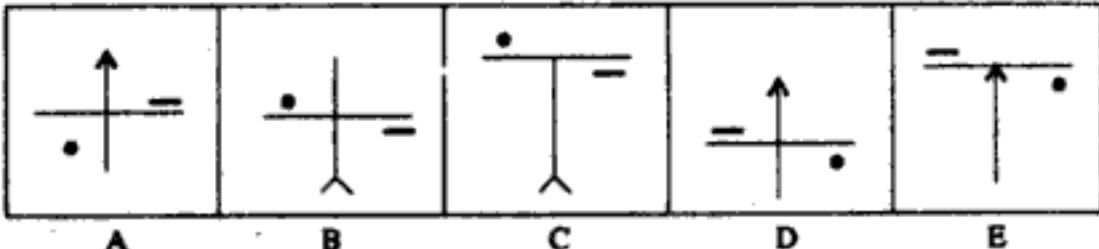
Answer Figures

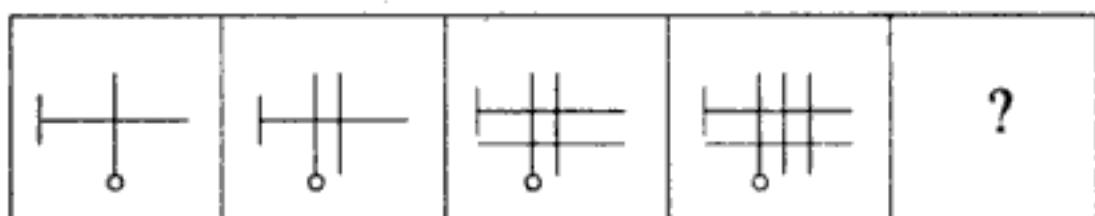
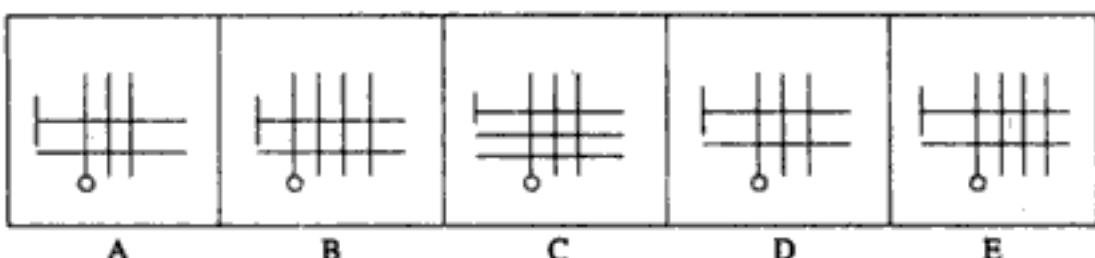
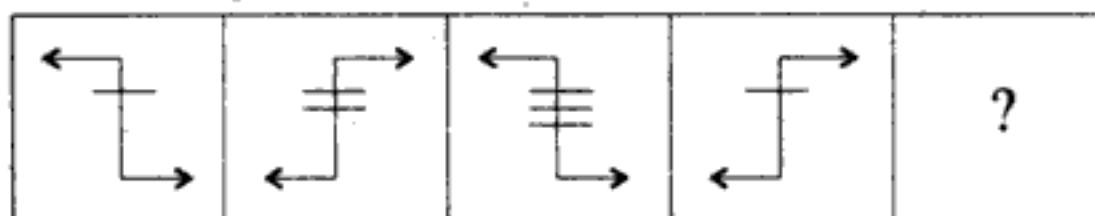
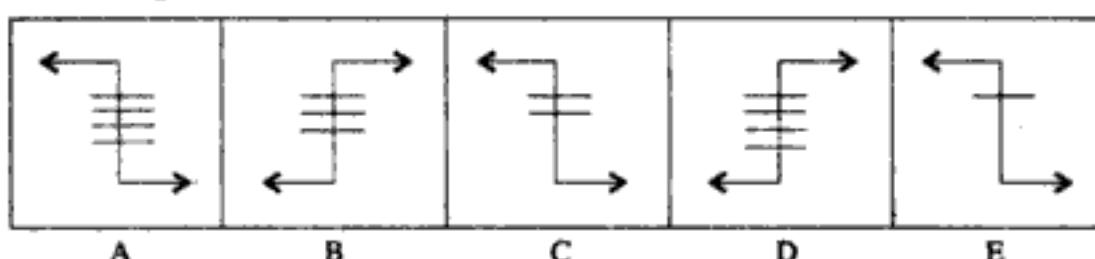
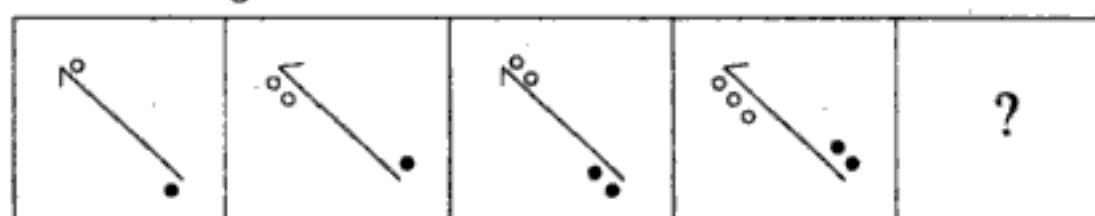
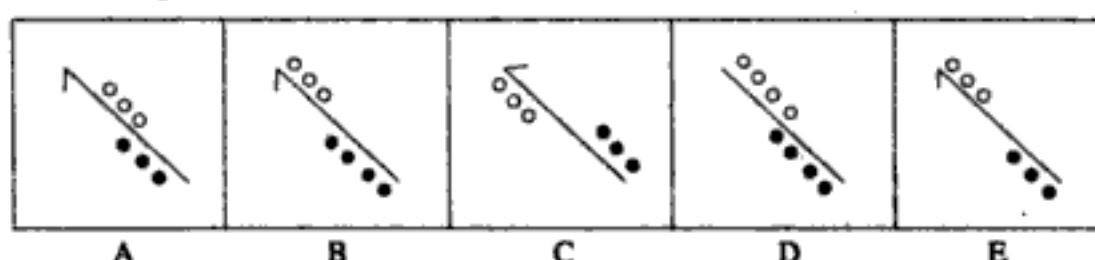


15. Problem Figures



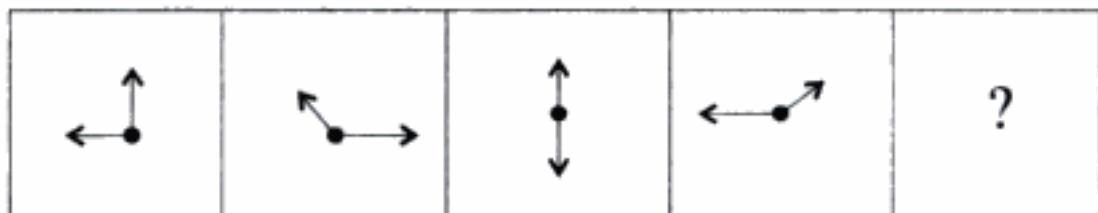
Answer Figures



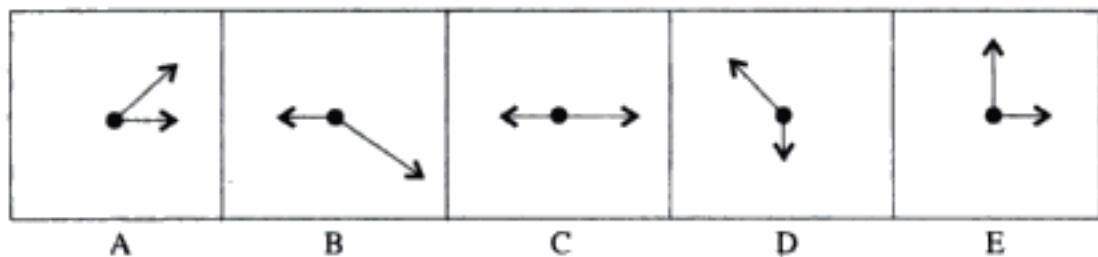
16. Problem Figures**Answer Figures****17. Problem Figures****Answer Figures****18. Problem Figures****Answer Figures**

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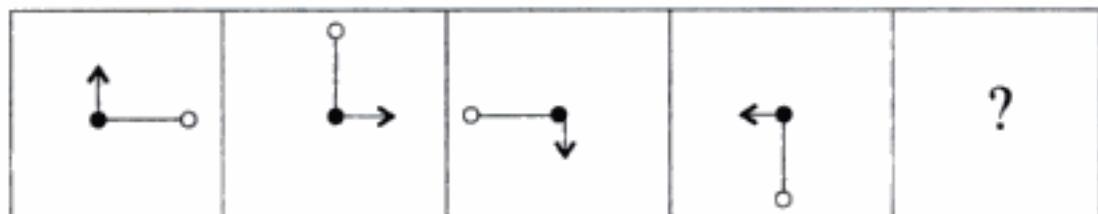
19. Problem Figures



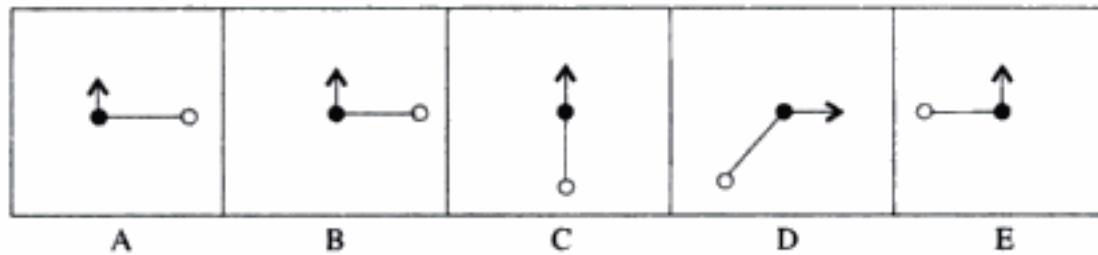
Answer Figures



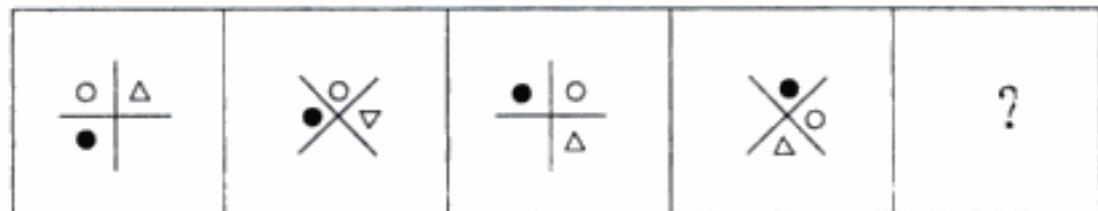
20. Problem Figures



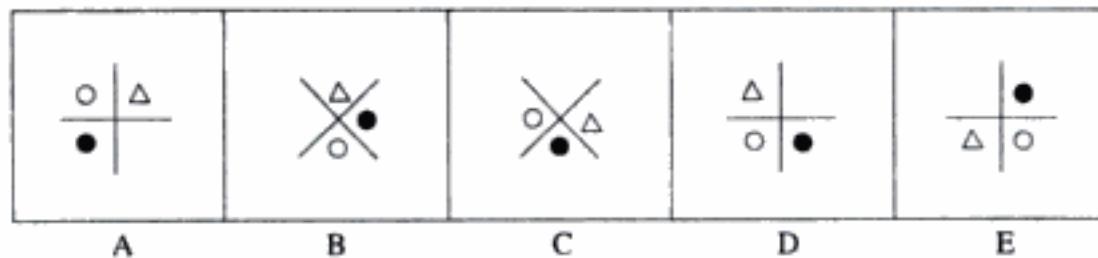
Answer Figures

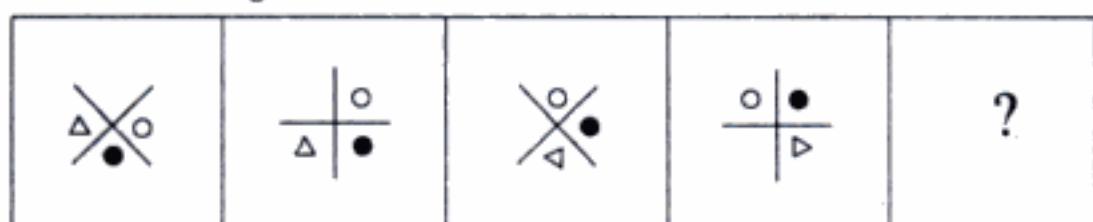
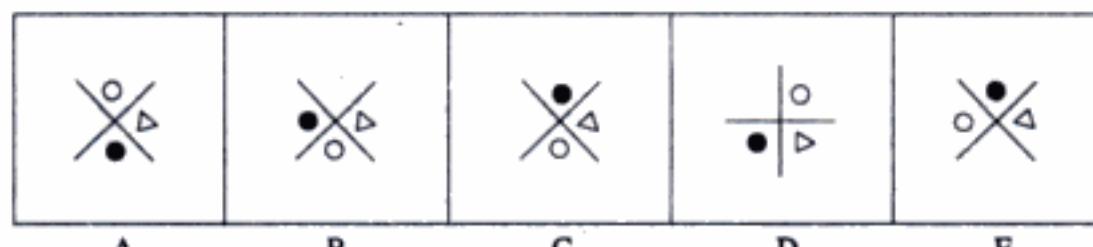


21. Problem Figures

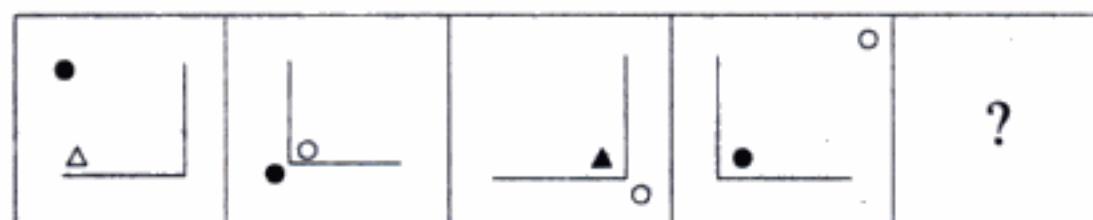
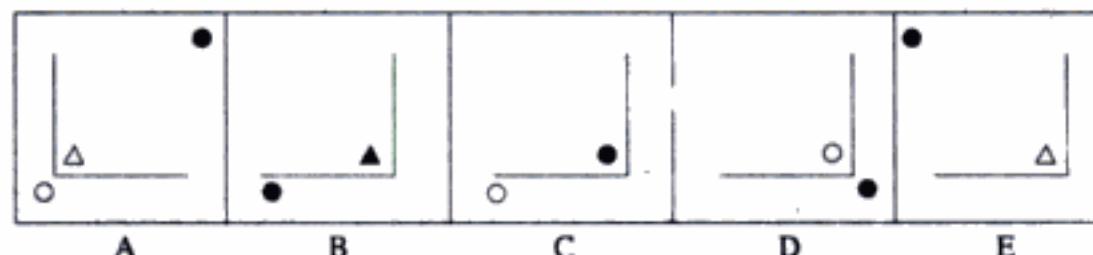


Answer Figures

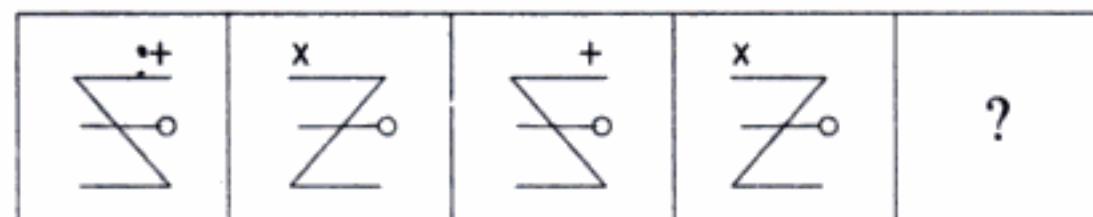
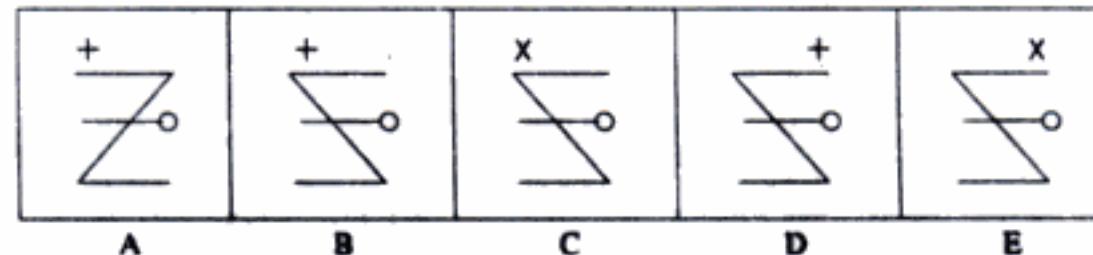


22. Problem Figures**Answer Figures**

A B C D E

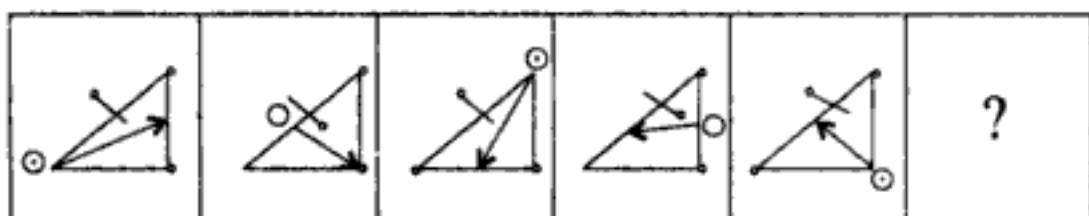
23. Problem Figures**Answer Figures**

A B C D E

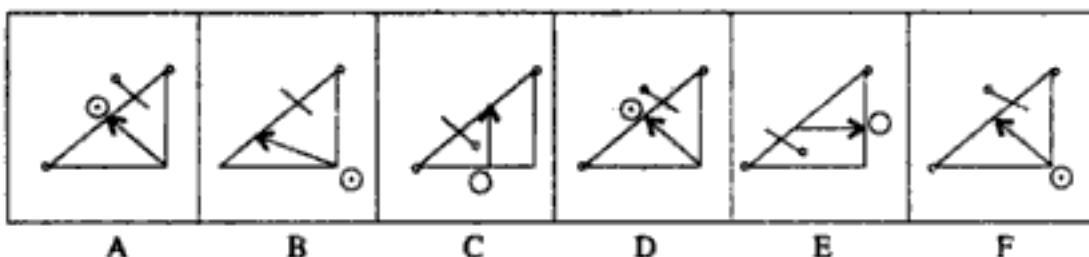
24. Problem Figures**Answer Figures**

A B C D E

25. Problem Figures



Answer Figures



Answer and Explanations

- 1.(e) Small unshaded ball alternately goes down and up in the left-hand side. The black dots decrease and the dashes (-) increase by one each time while moving up and down. Also the pointer becomes arrowed and curved alternately. Next figure should have no black dot, it should have 5 small dashes (-) and a small unshaded ball above the pointer to complete the series.
- 2.(d) Intersecting arrow changes direction and the small ball moves anti-clockwise. The plus sign (+) moves, turn by turn, to the left hand-side (bottom) and the right hand-side (upper) corner.
- 3.(e) Intersecting lines change direction alternately. The line having a ball-head turns up and down alternately while its tail is constantly in upward direction. Also, the black dot is moving in clockwise direction.
- 4.(e) The small ball and the dash (-) rotate clockwise.
- 5.(d) The lefthand side arrow turns up and down while the righthand side arrow turns at 45° anticlockwise.
- 6.(e) The small ball (o) changes from lefthand side to righthand side. A small line is added each time to bigger lines.
- 7.(c) The arrow intersects while turning counterclockwise. The plus (+) and the multiplication sign (\times) appear alternately.
- 8.(c) The black dots reduce from four to two and again increase from two to four. The arrow at the bottom moves from left to right while changing direction of the pointer from down to up and vice versa.
- 9.(d) The black dot travels from top to bottom on left side of outside of the triangle and then starts from left to right below the triangle.
- 10.(c) The black dot rotates clockwise while the arrow changes its pointer outward and inward.

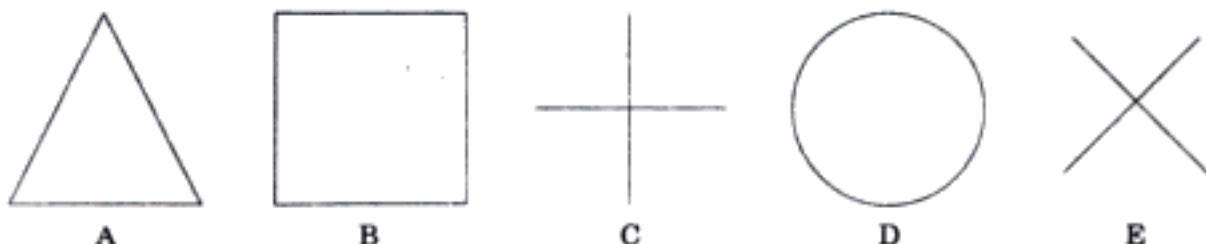
- 11.(e) When arrow intersects, its wings open up. Dot and dash change positions alternately.
- 12.(c) One side of arrow head is added to the horizontal lines in every figure.
- 13.(e) The black dot and hollow bar moves in clockwise direction, with three positions above the line and three positions below the line.
- 14.(c) The ball moves in clockwise direction and arrow tail appears alternatively.
- 15.(e) The horizontal line moves at two positions, top & middle alternatively. The ball and dash change side and location also.
- 16.(c) Once a horizontal line is added and once a vertical line is added.
- 17.(c) Horizontal lines increase from one to three and then repeat from 1 onwards again. The arrows change direction alternately.
- 18.(e) The arrowed head changes direction (left to right). Once the number of small balls (o) increases and then the number of black dots increases while changing positions.
- 19.(e) The small hand turns at 45° while the bigger hand turns at 90° , both in clockwise direction.
- 20.(b) The small hand turns at 90° in clockwise direction, while the bigger hand at 90° in anticlockwise direction.
- 21.(e) The pattern is rotated at 45° clockwise to produce the next pattern.
- 22.(e) The pattern is moving counterclockwise.
- 23.(e) The angle turns left to right alternately. The inside triangle and circle get shaded one by one. The black dot outside moves around counter-clockwise. Next figure should have a small unshaded triangle to repeat the sequence.
- 24.(d) The pattern changes direction alternately. The plus sing (+) and the multiplication sing (\times) appear alternately.
- 25.(c) The movement of the small circle around the triangle is accompanied by the alternate appearance of the dot inside the circle and the movement of the arrow inside the triangle. The alternate change in the direction of the pin is also an indicator.

TYPE 2: CLASSIFICATION

In non-verbal classification (odd man out) questions, you will be given a group of five or six items (diagrams). All but one of these items will be similar in some way or the other. You will be asked to choose the one that is not similar to the other figures given in the question.

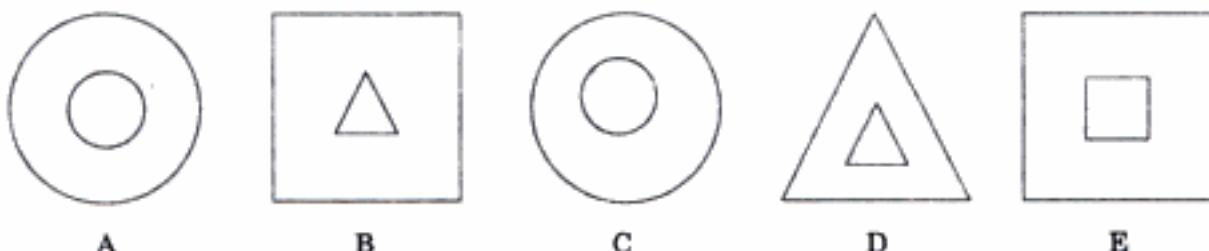
Illustrations

1. Which one of the five following figures is least like (or different from) the other figures?



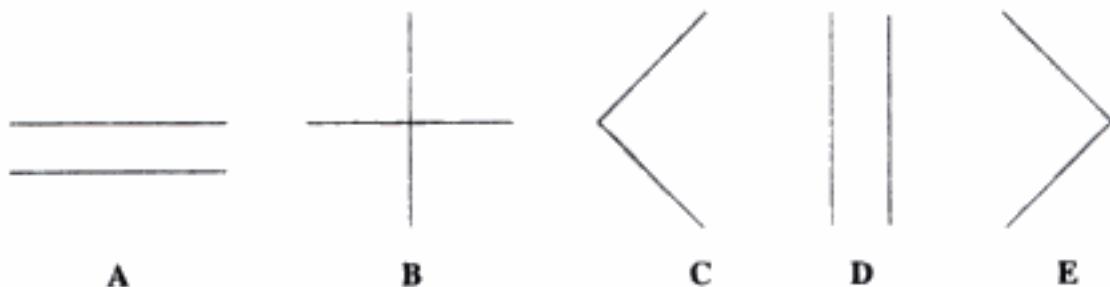
ANSWER: D The other figures are all made with straight lines. A circle is formed from curved lines and is therefore odd or different from the rest.

2. Which of the following five designs is least like the other four?



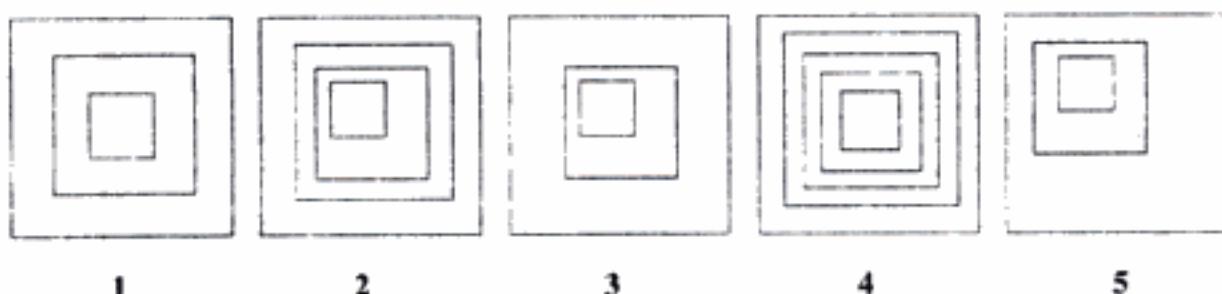
ANSWER: B Each design has two figures one within the other. The small figure inside is same as the outside figure. This is true for all designs except B.

3. Which of the following figures is different from the other?



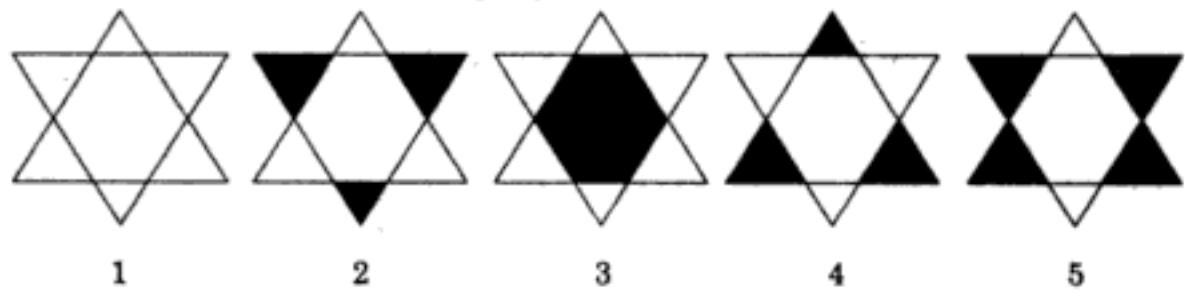
ANSWER: B All the others represent mathematical comparisons whereas figure B is a sign of mathematical operation.

4. Which among the following five figures is least like the other four or different in some way from the others?



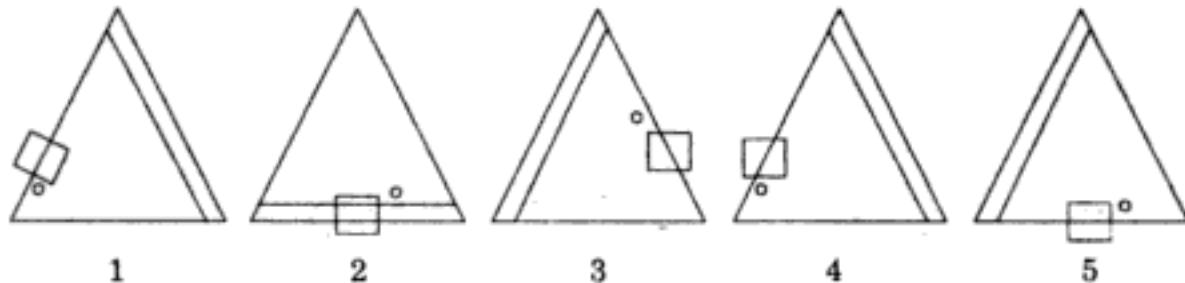
ANSWER: 2 All the others have an odd number of squares, figure (2) has an even number.

5. Which one of the following figures is least like the others?



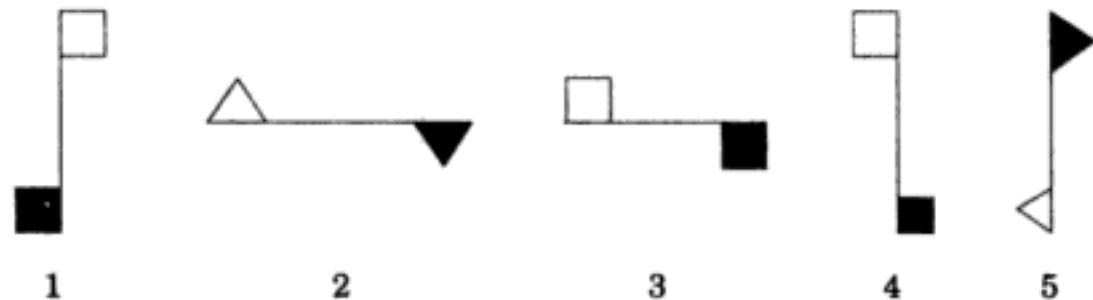
ANSWER: 1 Figure 1 is without shading, hence odd.

6. Select the figure which is different from others.



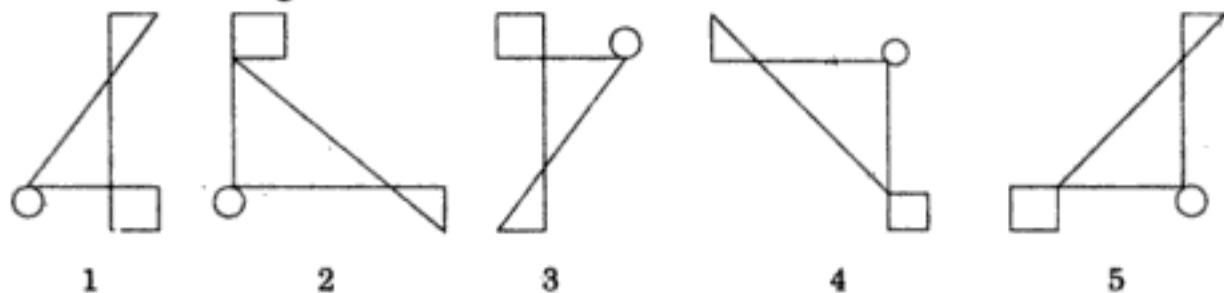
ANSWER: 5 The double bar of the triangle turns clockwise and the other elements turn anticlockwise. In figure 5 the double bar is on the wrong side, however, the position of the other elements are correct.

7. Which figure among the following is the odd one out?



ANSWER: 4 If we turn all figures to take a horizontal stance with shaded figure on righthand side, the shaded portion will always be below the line, whereas in case of (4), it ends up above the line.

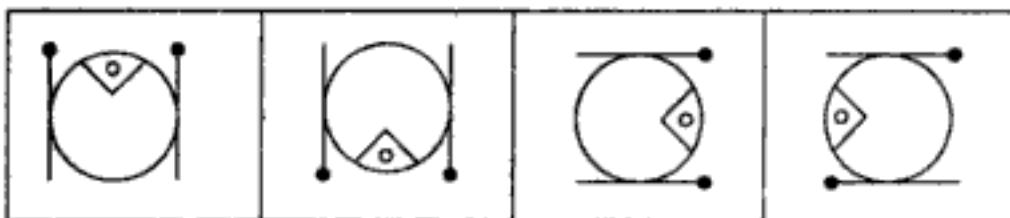
8. Select the figure that has different characteristics or is different from the rest of the figures.



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ANSWER: 5 The figure turns 90° each time, and the square and the circle change places. Figure 5 does not follow the sequence.

9. Select the figure that is different from that rest of the figures.



A

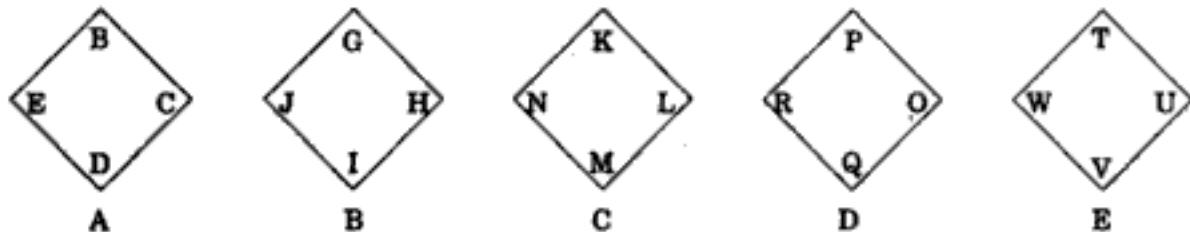
B

C

D

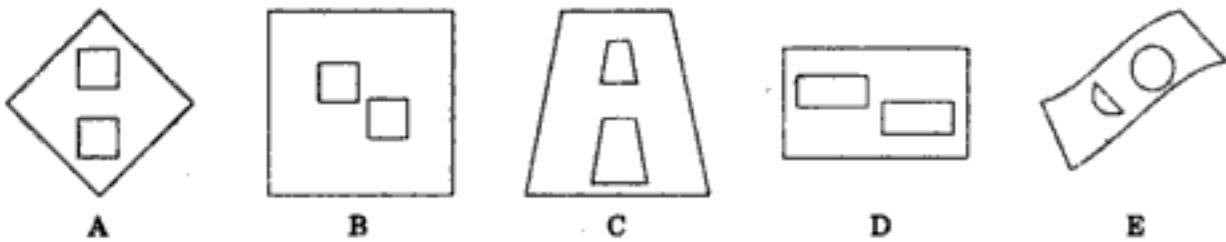
ANSWER: D In other figures, the heads of the pin are in the same direction whereas in figure D they are in opposite directions.

10. Which of the following five figures does not belong in the series?



ANSWER: D In the other figures, the sequence of letters is in alphabetical order starting at the top and going clockwise.

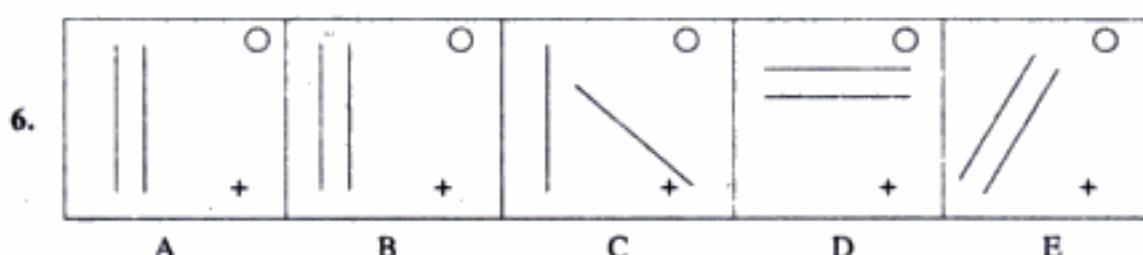
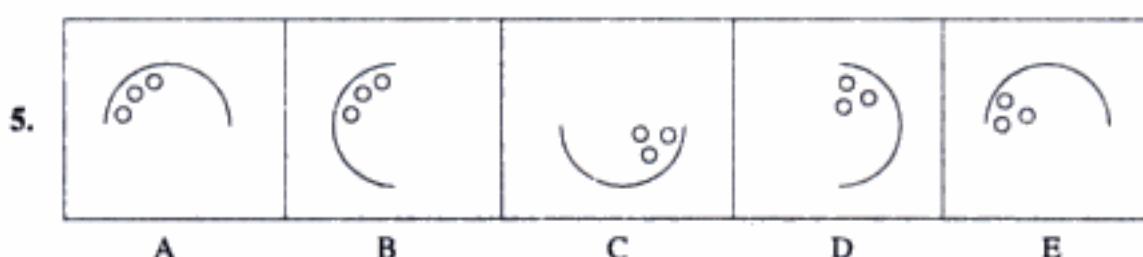
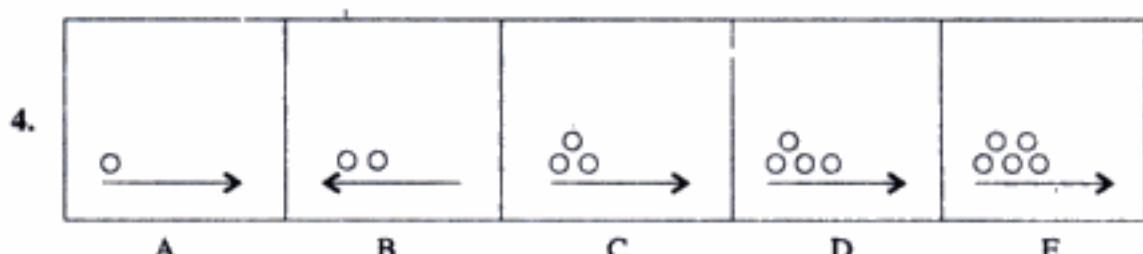
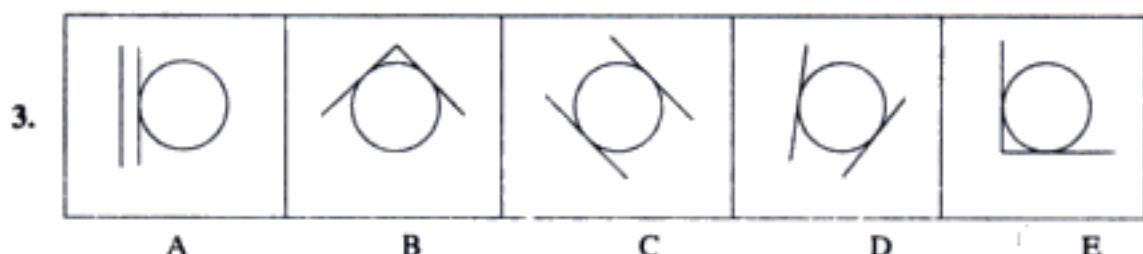
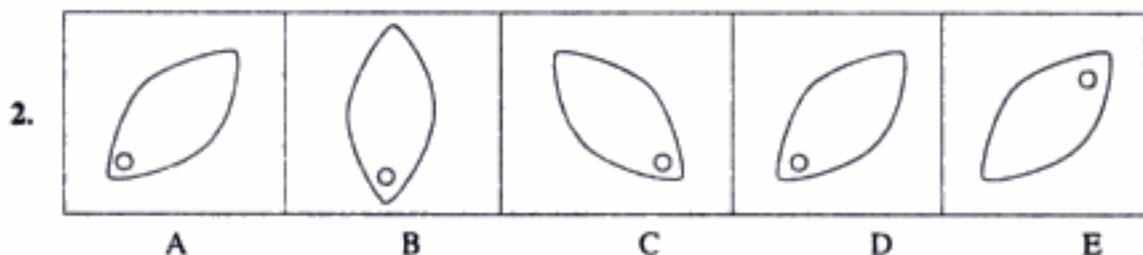
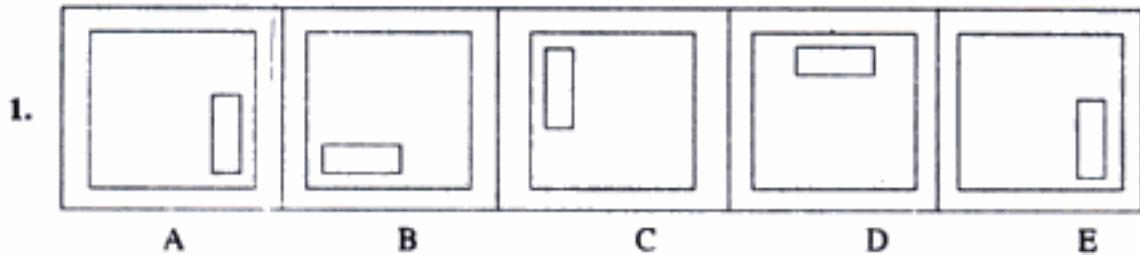
11. From the following five figures, identify the figure which is most different from the others.



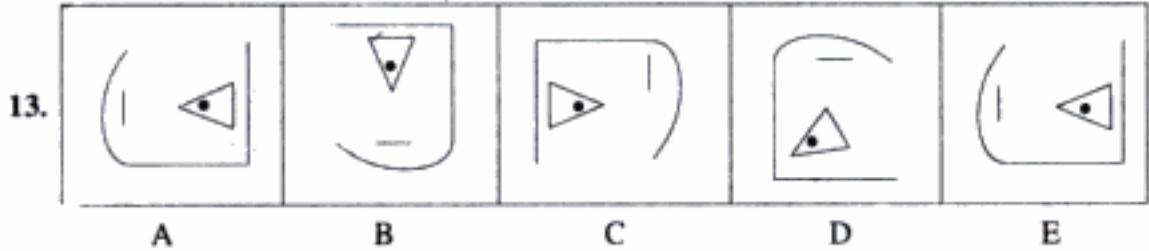
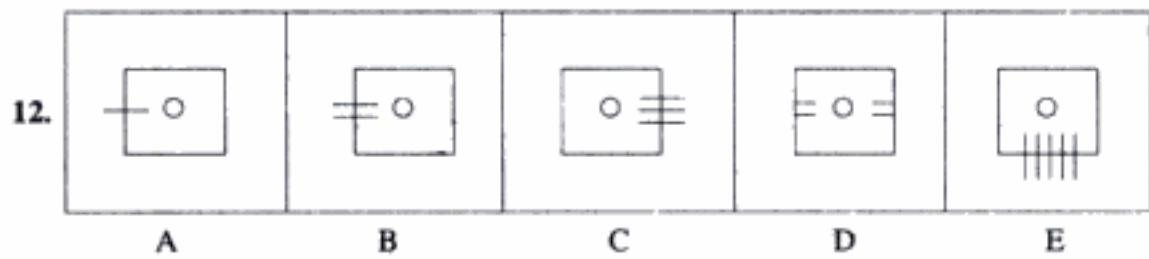
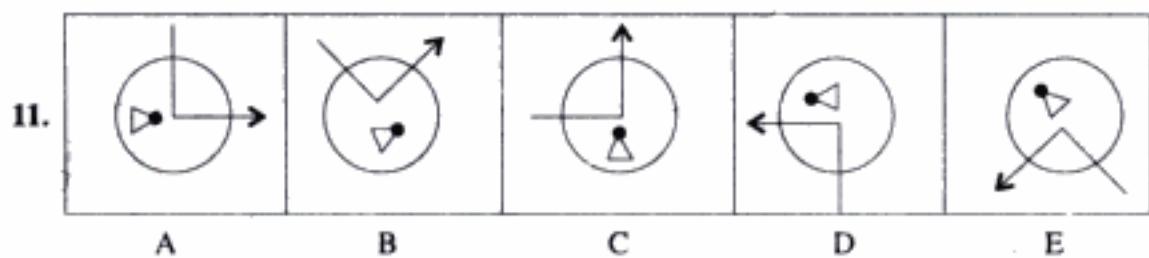
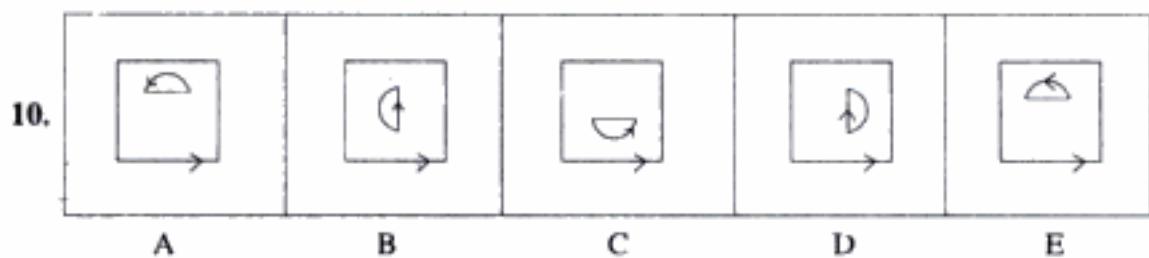
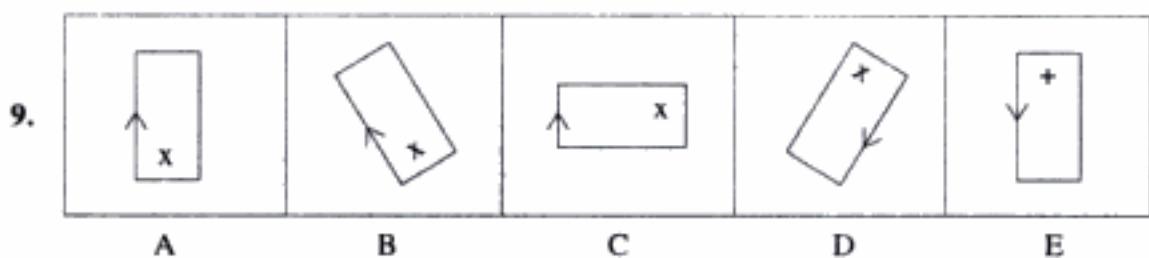
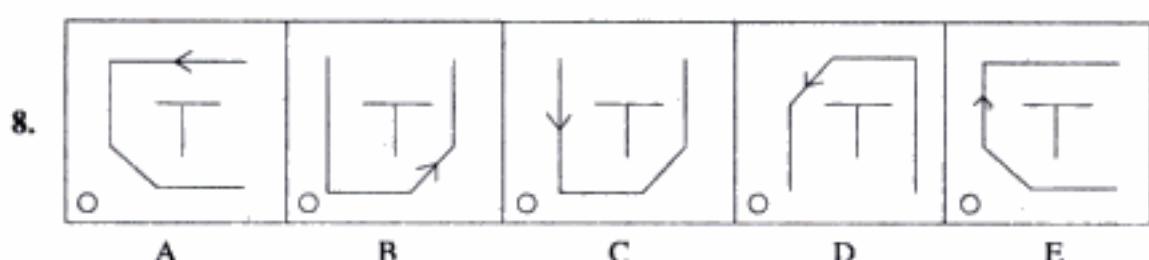
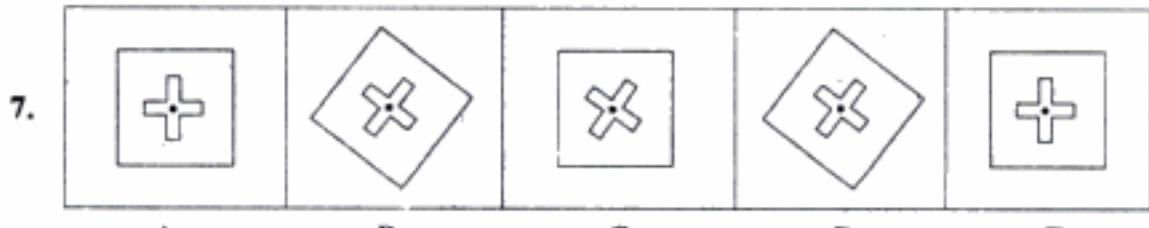
ANSWER: E All the other figures contain smaller versions of themselves.

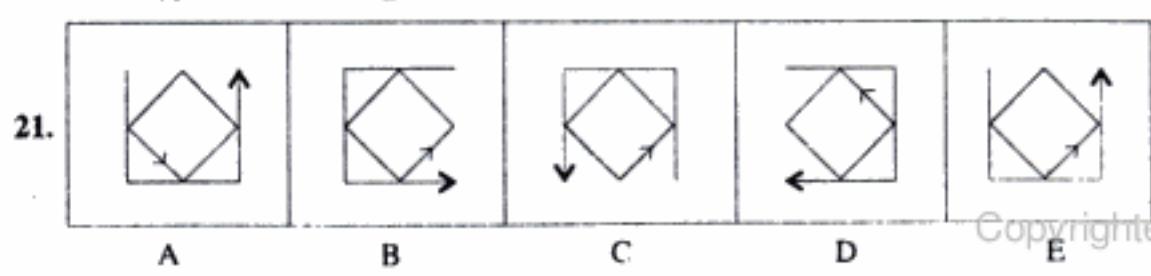
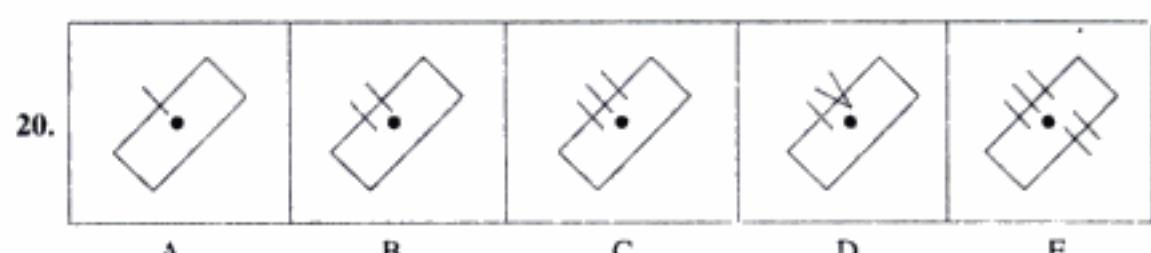
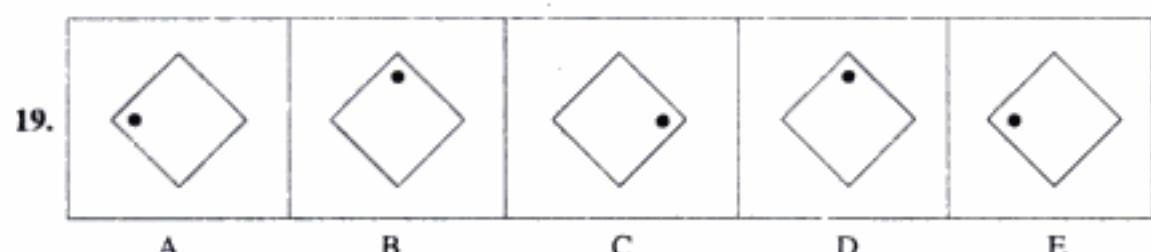
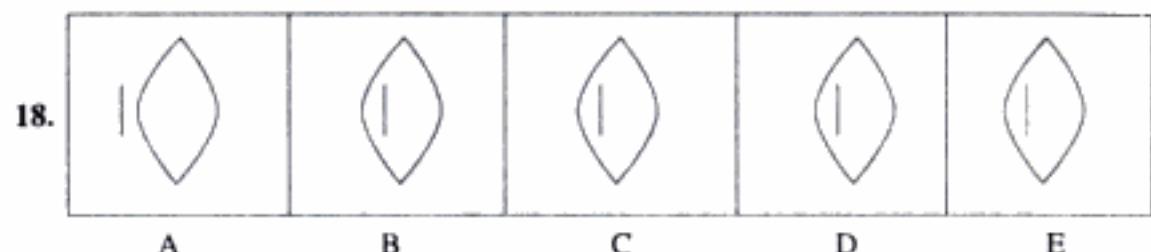
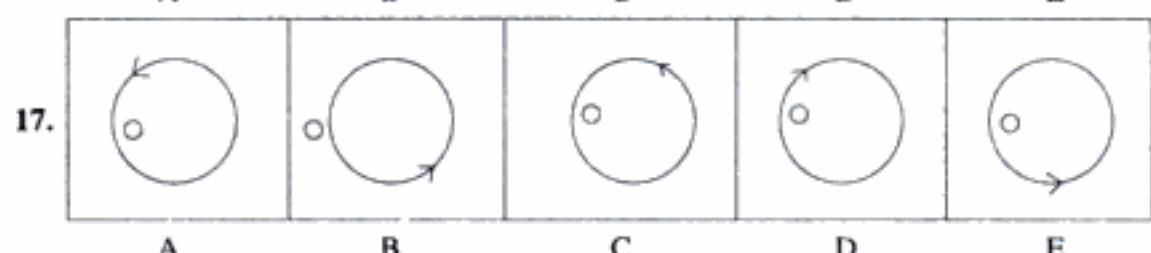
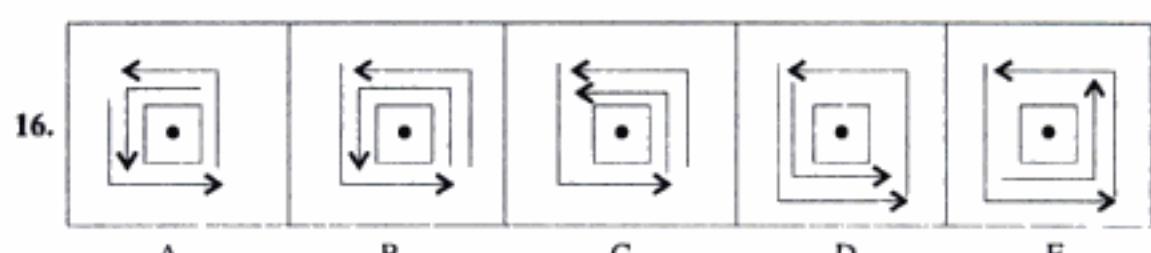
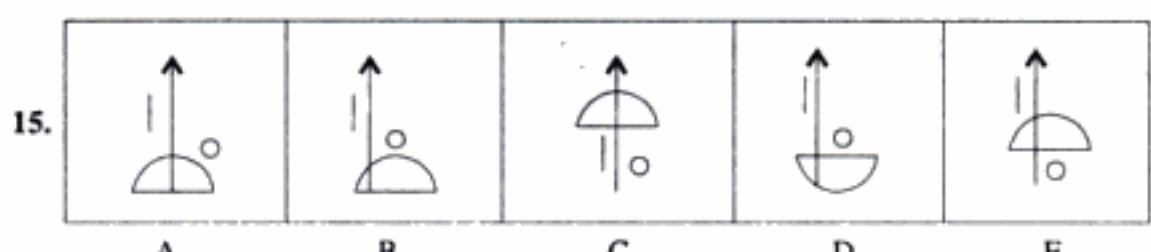
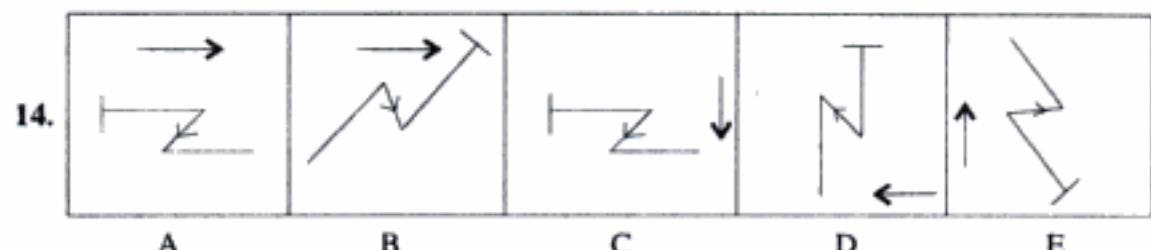
Practice Questions

Directions: Four of the five figures marked A, B, C, D, and E in some way or the other and one is different from the rest. You have to choose the figure which is different (odd).

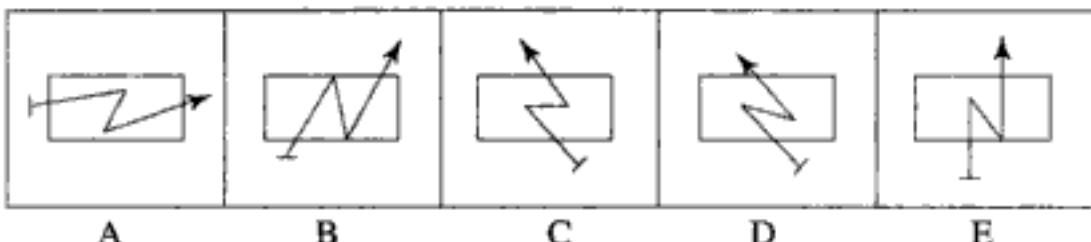


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22.

**Answer Key (Classification)**

- 1.(d) The small rectangle is in the middle whereas in others it is at the corner.
- 2.(d) The ball is not in correct position. The main figure is moving by 45° at each turn with the ball in the lower tip. Hence in (d) the figure should be placed horizontally with the ball in the right tip.
- 3.(a) Two lines touch the circle in all figures except (a).
- 4.(d) Direction of the arrow changes in alternate figure.
- 5.(b) The arc is rotating in anticlockwise direction with three balls on the right-hand side corner of the arc. Hence in (b) the balls should be at the lower corner of the arc.
- 6.(c) Rest all have pair of the parallel lines.
- 7.(c) The edges of the internal cross are not parallel to outer lines of the square.
- 8.(e) The direction of the arrow should be anticlockwise, whereas in the last figure (e) it is clockwise.
- 9.(e) The direction of the arrowhead is wrong. It should be in clockwise direction as in others.
- 10.(d) Direction of arrow in 'D' is different.
- 11.(e) In all other figures the direction on the top of the triangle is in line with the direction of the arrow.
- 12.(d) In all other figures the small lines are intersecting the square whereas in (d) they are inside the square.
- 13.(d) In all other figures the triangle with the dot is pointing towards the curved side of the outer figure.
- 14.(b) In (b), the direction of arrow is towards the small line on 'z'.
- 15.(d) The direction of the ''.
- 16.(b) In all other figures there are six lines outside the square whereas in (b) there are seven lines.
- 17.(d) In all other figures the direction is shown anticlockwise.
- 18.(a) The line is outside the elliptical figure.
- 19.(d) The dot inside the figure is moving clockwise. Therefore, in (d) it should be at the bottom.

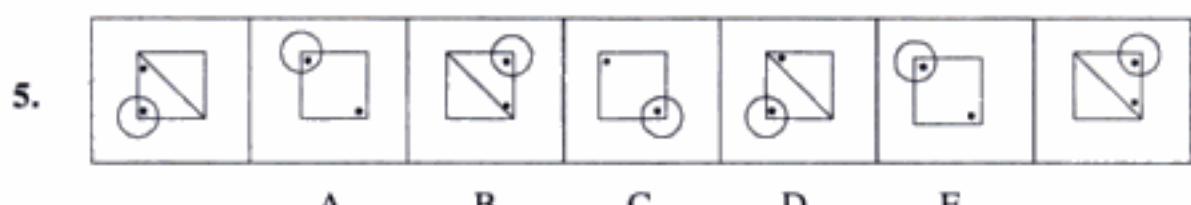
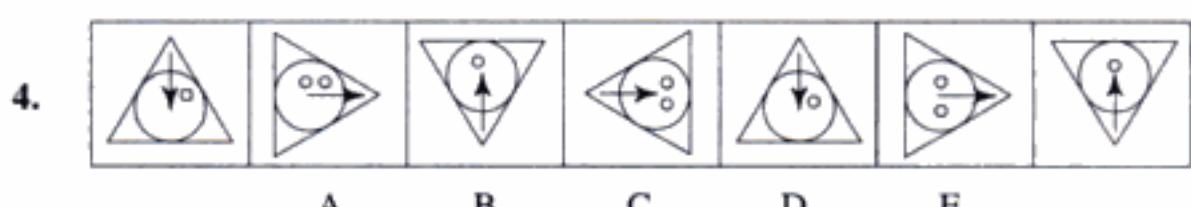
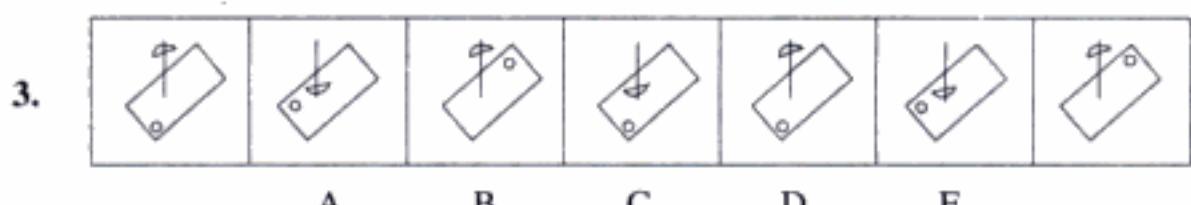
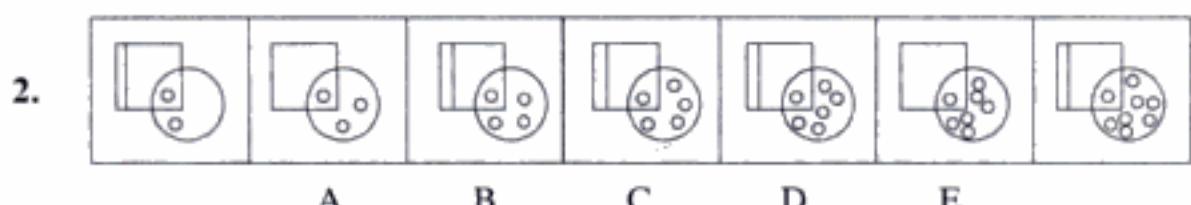
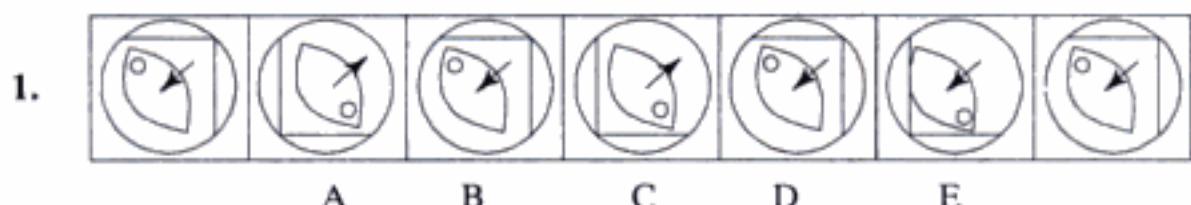
20.(d) Number of small lines is increasing by one each time. In (d) there should be four lines. (Even if it makes Roman IV, it still has three lines only).

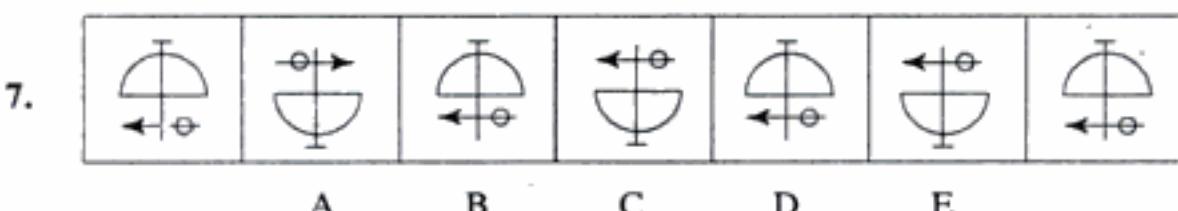
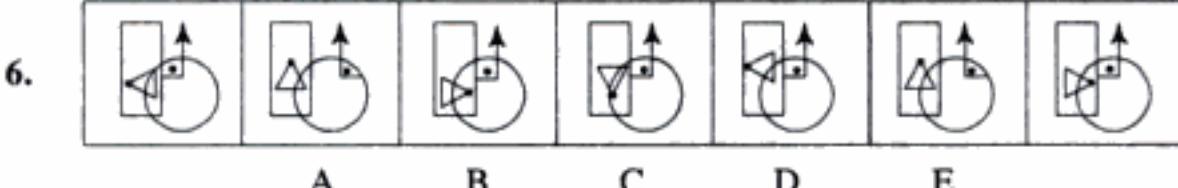
21.(d) The direction of the outer shell is wrong.

22.(a) In the other figures the arrow is intersecting the longer side of the rectangle.

Practice Questions

Directions: The figure at the extreme left starts the series and the figure at the extreme right is the last figure of the series. In between, there are five figures marked A, B, C, D and E out of which only one does not fit into the series. Select the figure which does not fit into the series.





Answers and Explanations

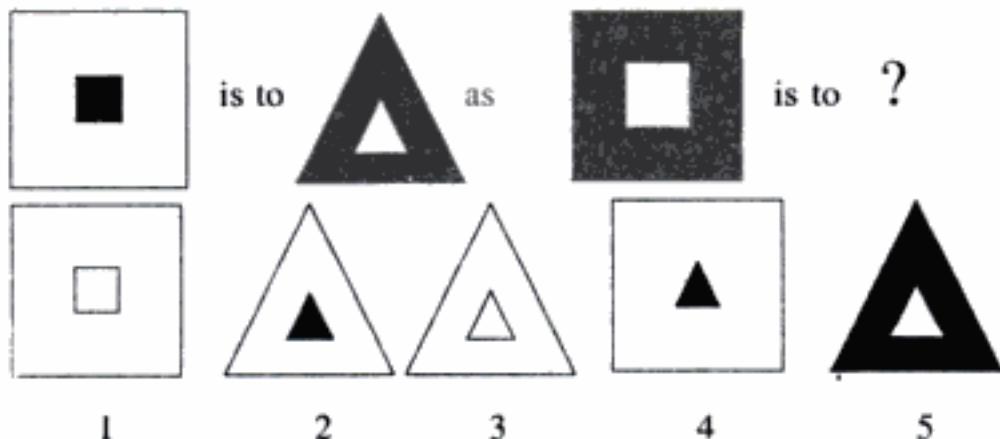
- 1.(E) The original figure alternatively changes figures.
- 2.(C) Extra line on one side of the square has to come on every alternate figure.
- 3.(C) The ball is moving clockwise in corners in subsequent figures.
- 4.(C) The arrow points inwards and outwards alternatively in this series of figures.
- 5.(D) The dot alongside the diagonal has to be in the same section as the other dot. So, (C) should have been just similar to the first figure of this series.
- 6.(C) The figures A, C and E has to be similar. Look for arrow touching the rectangle or the circle in alternate figures.
- 7.(A) The arrows should have been always pointing towards left-hand side.

TYPE 3: ANALOGICAL NON-VERBAL REASONING

Analogy is defined as *correspondence in some respects between things otherwise dissimilar*. Analogical reasoning refers to the process of reasoning from parallel cases.

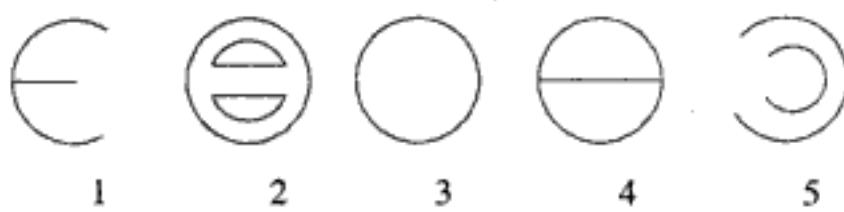
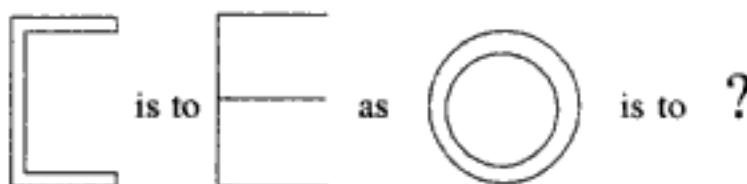
Illustrations

1. Which of the following five numbered figures makes the best comparison?



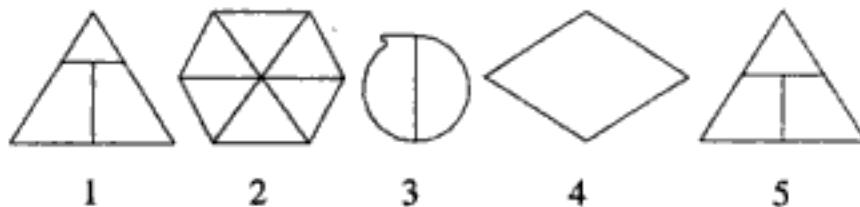
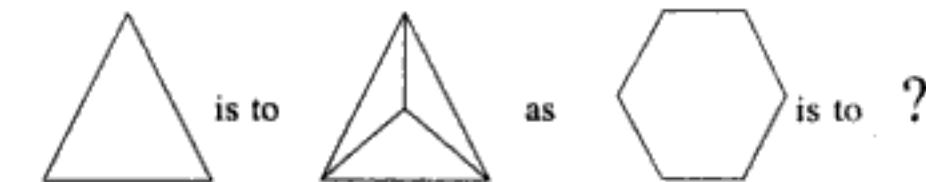
ANSWER: 2 The shading and unshading of the inner figure varies alternately, while the shape of outer figure also varies.

2. Choose from the following numbered figures, the one which makes the best comparison or has a relationship similar to that between the first two figures.



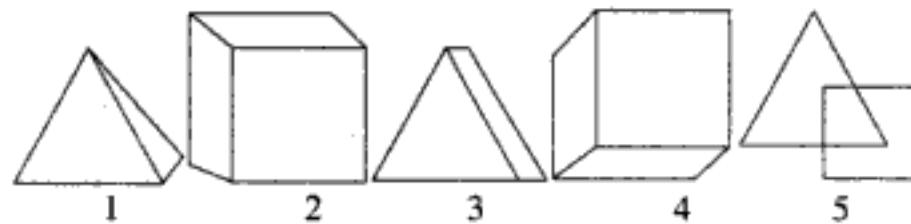
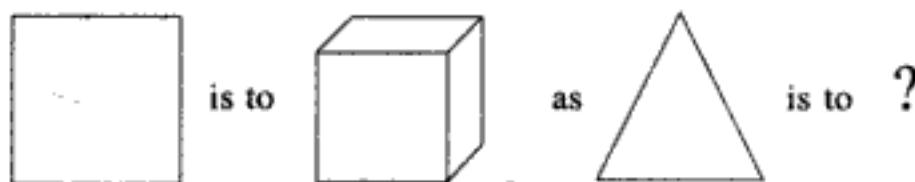
ANSWER: 4 Reduce the solid (doubled) lines to a single line and add a horizontal single line.

3. Which of the following five numbered figures makes the best comparison?



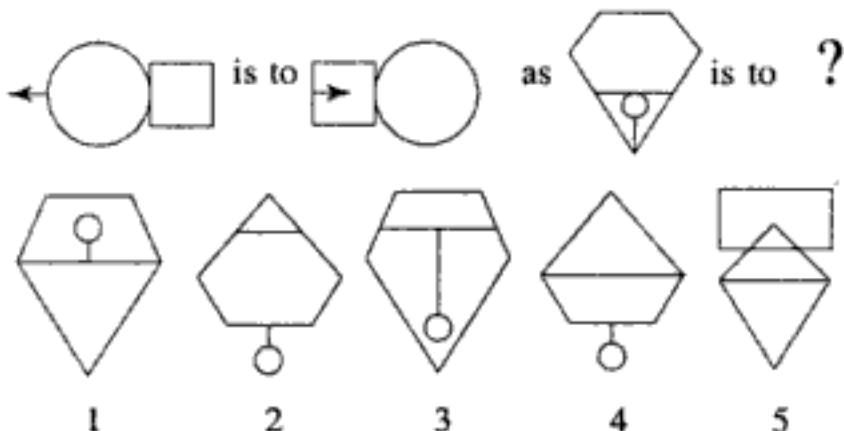
ANSWER: 2 The six-sided hexagon is divided into six equal parts by lines drawn from its vertices. Just as the three-sided triangle is divided into three equal parts by lines drawn from its vertices.

4. Select from the numbered figures the one which has the same analogical relationship as in the first two figures?



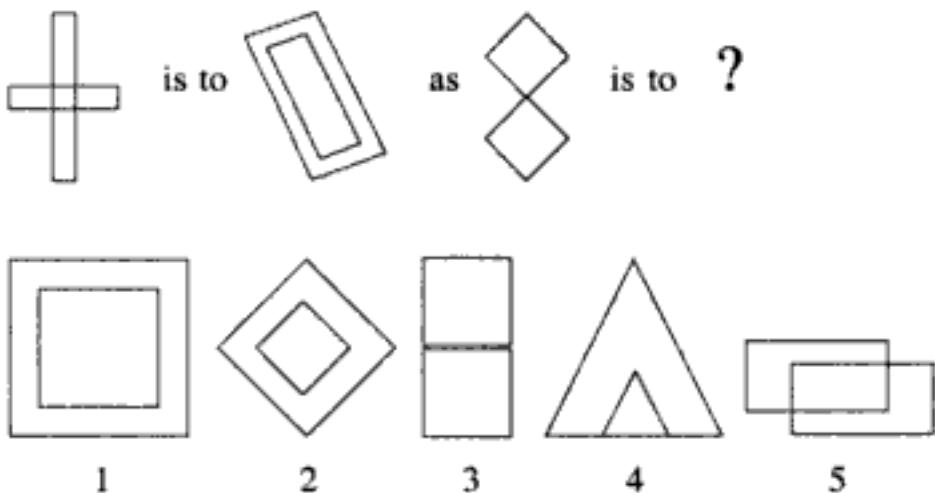
ANSWER: 1 The square is a direct frontal view of the cube that is seen on looking from right to left. The triangle is a direct frontal view of the pyramid that is (answer figure 1) seen on looking from right to left.

5. Which of the five numbered figures makes the best comparison or has the same relationship as the first two figures?



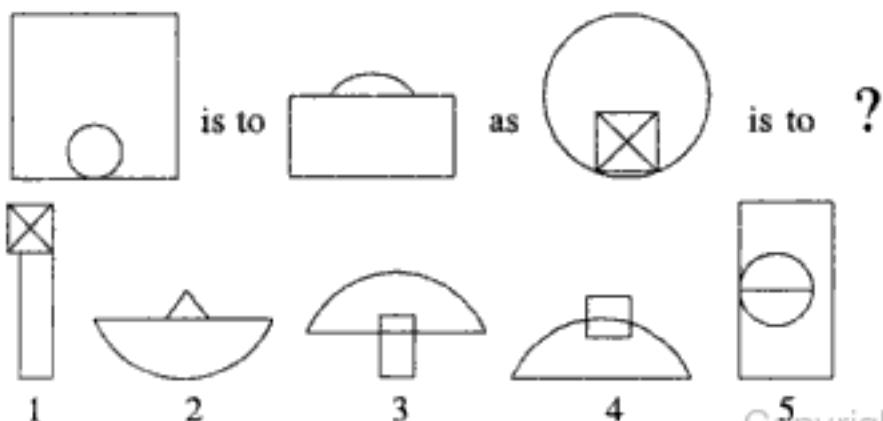
ANSWER: 2 The position of the geometric figures is reversed. The line remains on the same side of the figure, but is reversed.

6. Which of the five numbered figures will come next to complete the analogy or relationship?



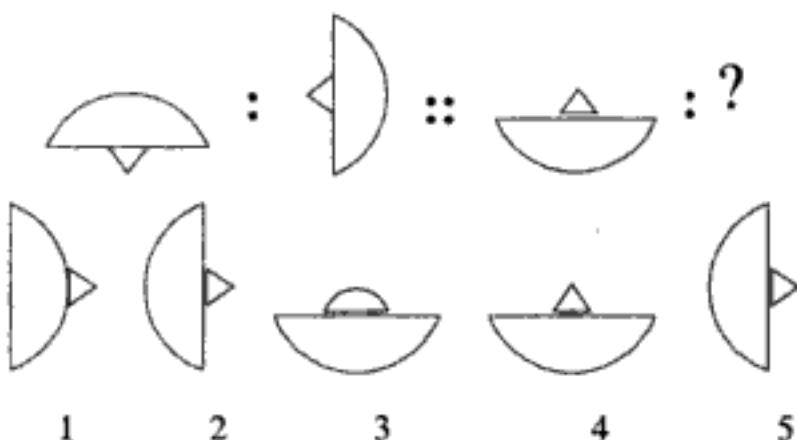
ANSWER: 1 Superimpose the figures and rotate them.

7. Identify the numbered figure that completes the relationship, similar to that between the first two figures.



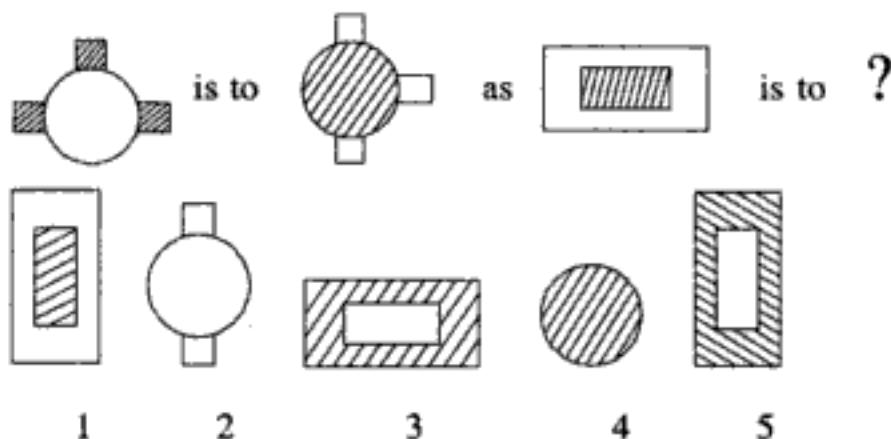
ANSWER: 2 The two figures represent side views and top views of the same pair of objects. A lens surmounted by a right pyramid is the only figure which fits.

8. Choose the figure that replaces the question mark (?) to give the same relationship as the first two figures.



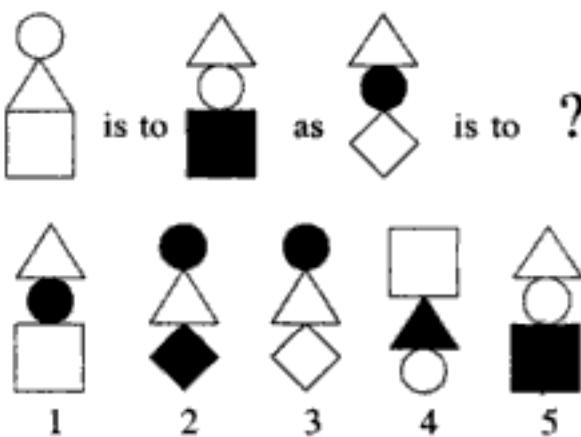
ANSWER: 2 The figure is turned 90° in the clockwise direction.

9. Which of the five numbered figures completes the sequence, with the same relationship as between the first two figures?



ANSWER: 5 The rectangle, like the circles, turns a quarter of a turn and the colours of its surfaces (white and shaded) are reversed.

10. Choose an appropriate figure from the five numbered figures to replace the question mark (?).

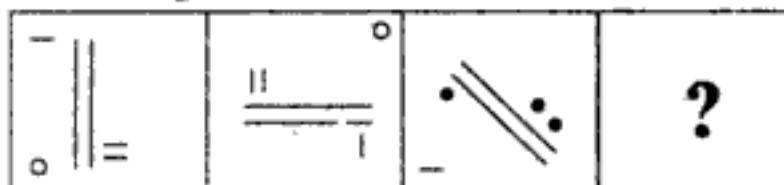


ANSWER: 2 The top shapes change places. The bottom shape stays in the same position but changes colour.

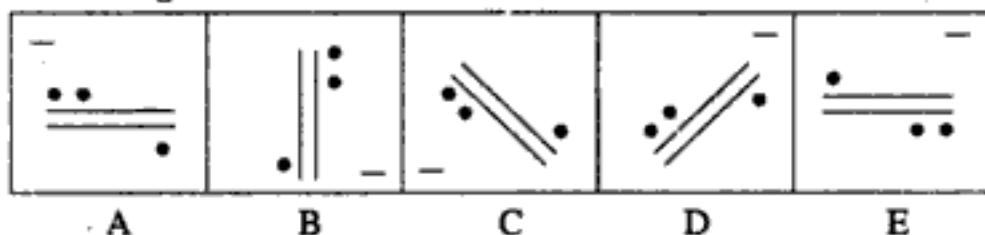
Practice Questions

Direction: In each of the following questions, two sets of figures are given, viz: Problem Figures (PF) and Answer Figures (AF). The first two PF bear a certain relationship. Based on the same relationship (analogy) select from answer figures (AF) an appropriate figure to replace the question mark in PF.

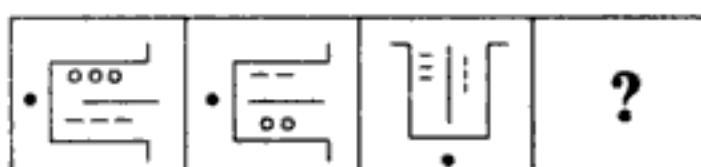
1. Problem Figures



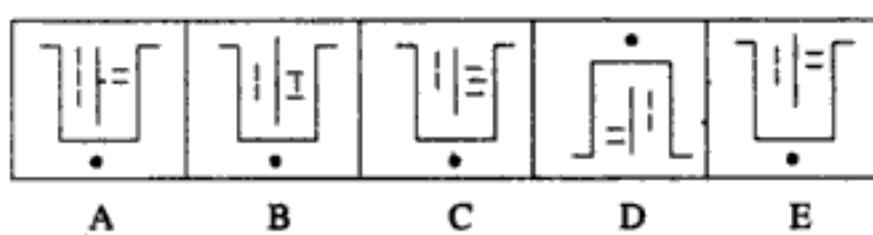
Answer Figures



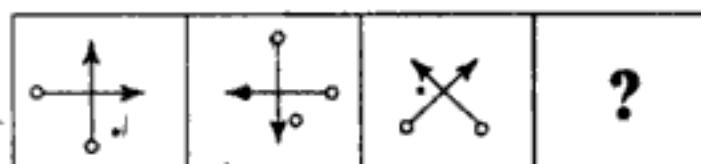
2. Problem Figures

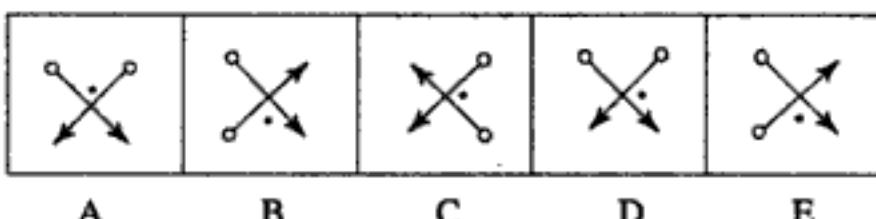


Answer Figures

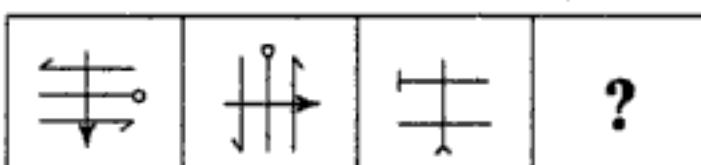
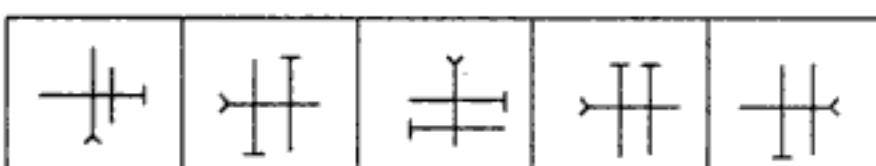


3. Problem Figures

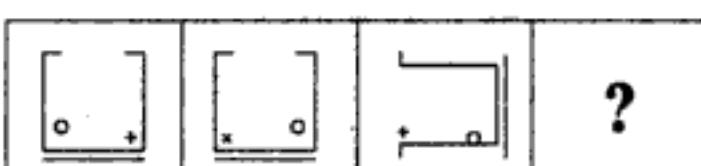
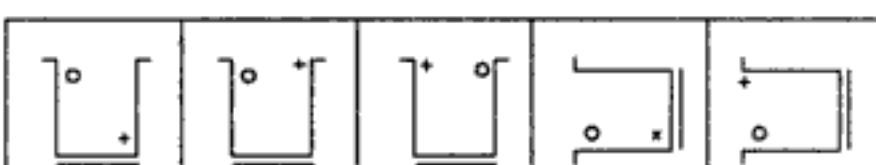


Answer Figures

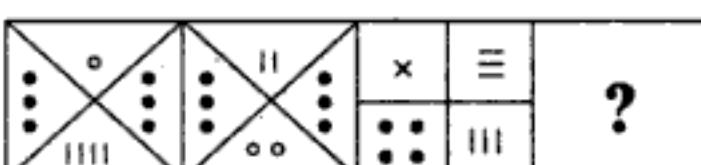
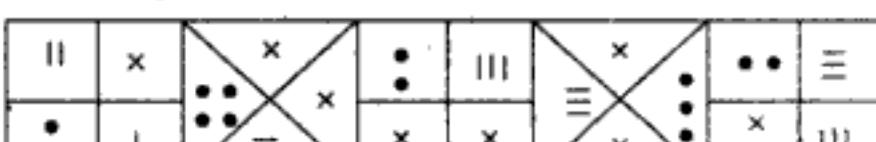
A B C D E

4. Problem Figures**Answer Figures**

A B C D E

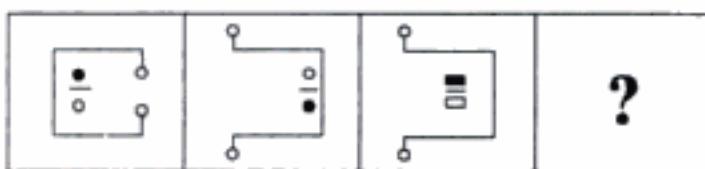
5. Problem Figures**Answer Figures**

A B C D E

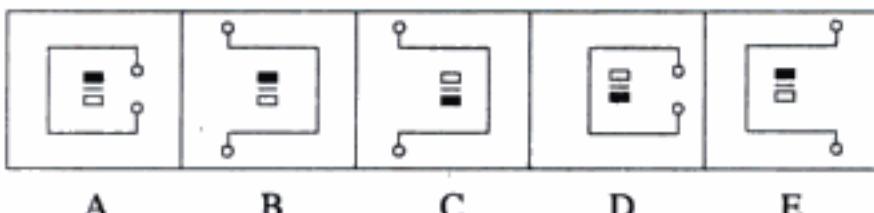
6. Problem Figures**Answer Figures**

A B C D E

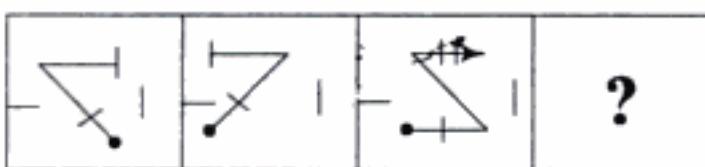
7. Problem Figures



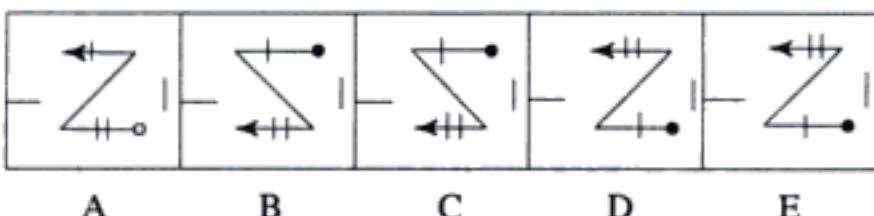
Answer Figures



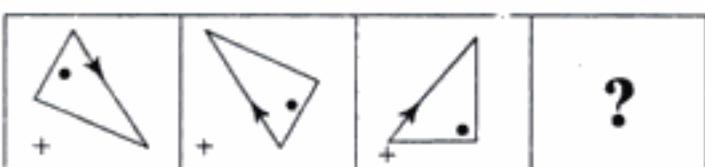
8. Problem Figures



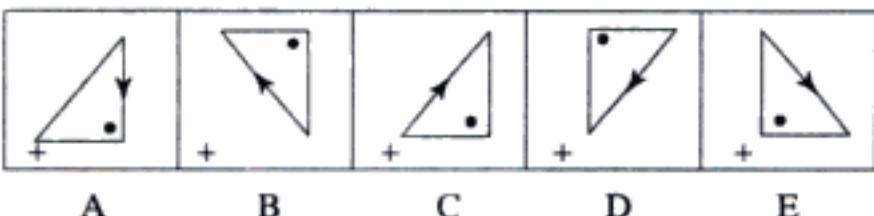
Answer Figures



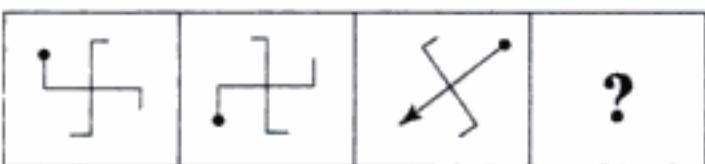
9. Problem Figures

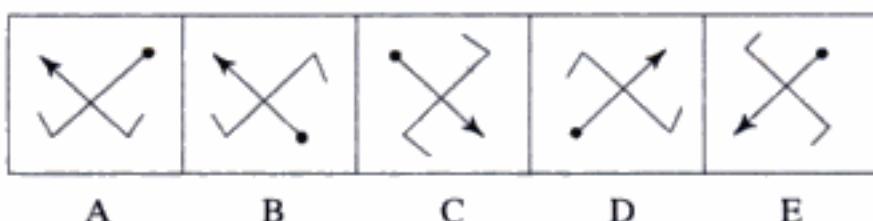
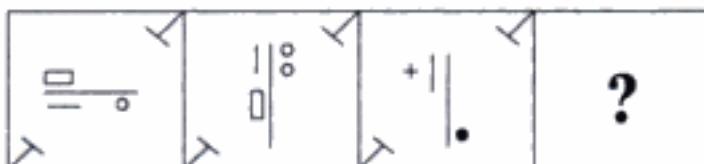
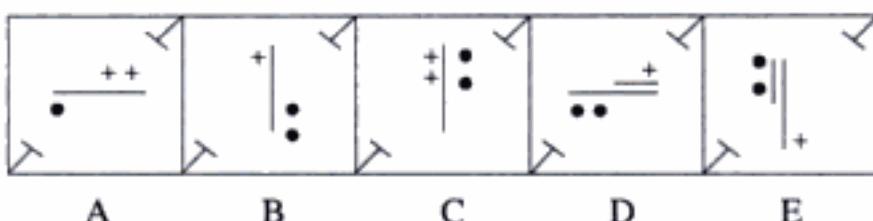
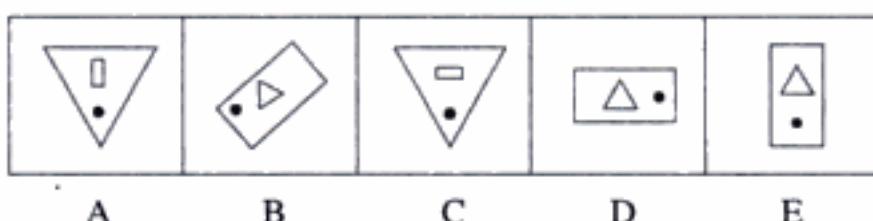
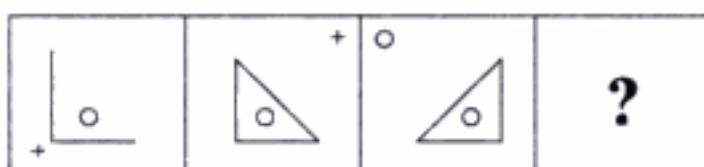
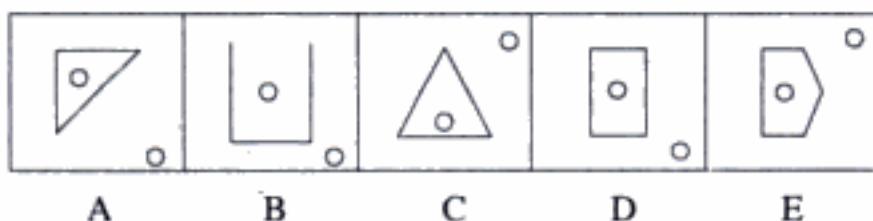


Answer Figures

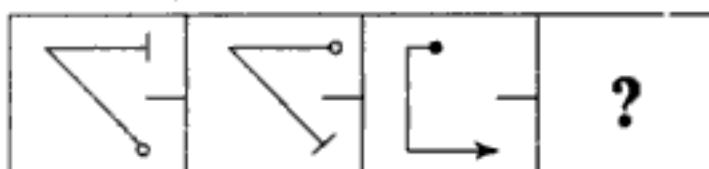


10. Problem Figures

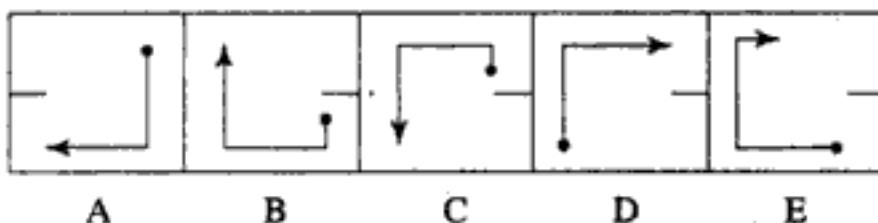


Answer Figures**11. Problem Figures****Answer Figures****12. Problem Figures****Answer Figures****13. Problem Figures****Answer Figures**

14. Problem Figures

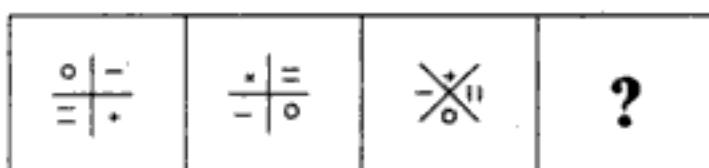


Answer Figures

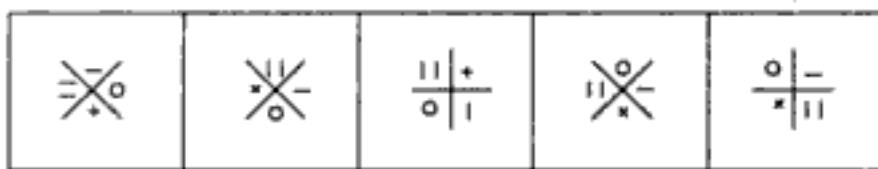


A B C D E

15. Problem Figures

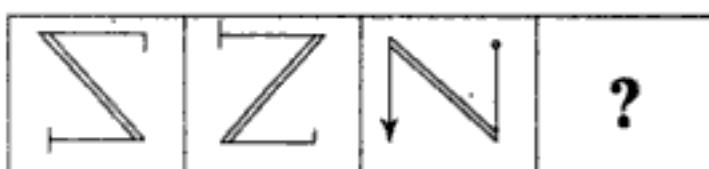


Answer Figures

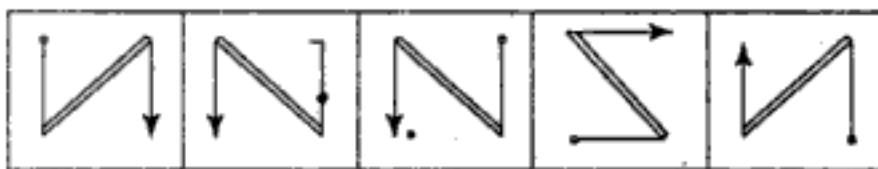


A B C D E

16. Problem Figures

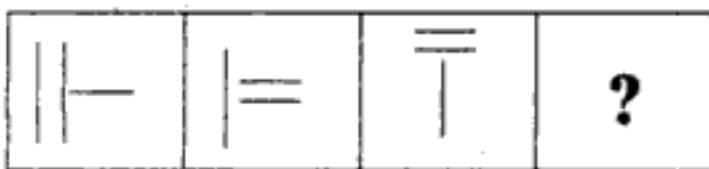


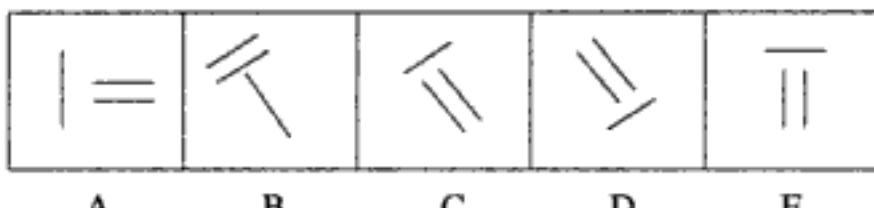
Answer Figures



A B C D E

17. Problem Figures



Answer Figures

A

B

C

D

E

Answers and Explanations

(Please note: PF = Problem Figure/AF = Answer Figure)

- 1.(d) The line takes a full turn from left to right and small lines shift from left to right in PF 1 and 2. Keeping the same analogy, PF 3 turns and figure (d) in answer figure shows its position to replace the question mark.
- 2.(e) In PF 1 and 2 you will note that while small balls shift from top to bottom they reduce in number and similarly the small ticks. Similarly to replace the question mark in PF 4, AF (e) shows the correct position and number of ticks.
- 3.(d) Arrows change direction in first two PF, and the small ball changes direction. On the same pattern, PF 3 should change directions of arrows and the position of small ball to replace the question mark in PF 4.
- 4.(e) The intersecting vertical arrows turn 90° following anticlockwise motion.
- 5.(d) Small ball and plus (+) and multiplication signs (×) change positions, and + while changing place becomes ×.
- 6.(e) Two signs decrease while changing positions, two signs change positions without changing in number.
- 7.(d) While the main figure change direction, the open lips close and shaded and unshaded figures change positions.
- 8.(d) The main figure change directions.
- 9.(d) The main figure change the position by 180°.
- 10.(d) The intersecting arrows change directions and gets totally inverted. Compare PF 1 and 2 with AF (d) and PF 3.
- 11.(d) Vertical lines become horizontal and vice versa. At the same time one item increase and one decrease on the lines.
- 12.(d) Inner figure comes out and outer figure goes in.
- 13.(d) One line is added in each figure. The plus sign change direction as the small ball changes direction in PF 3 and AF (d).
- 14.(e) Only the ends (arrow and black ball) changes its position.
- 15.(d) While the main figure changes direction, the plus (+) becomes (×).

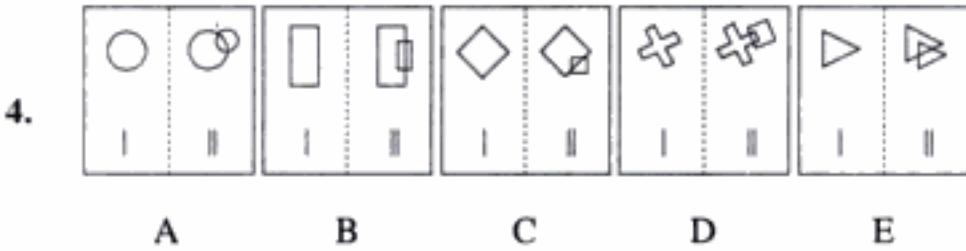
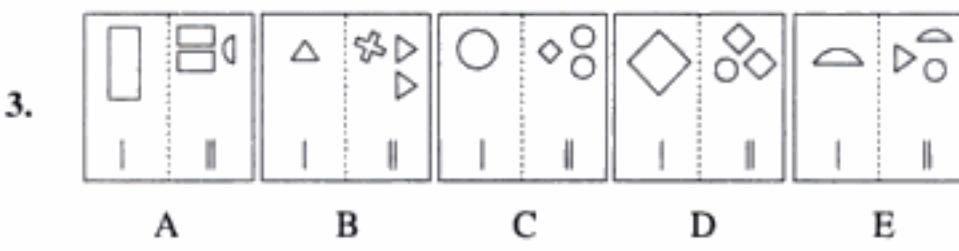
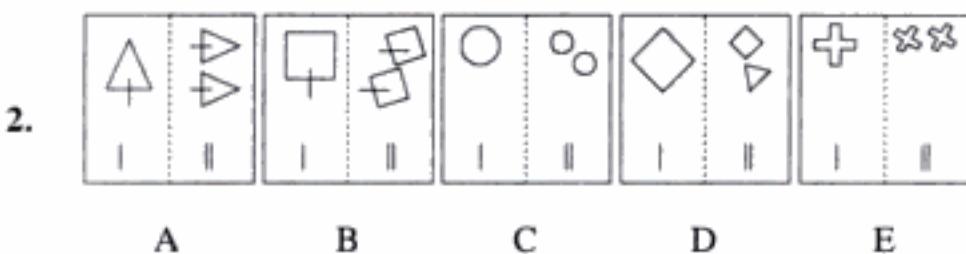
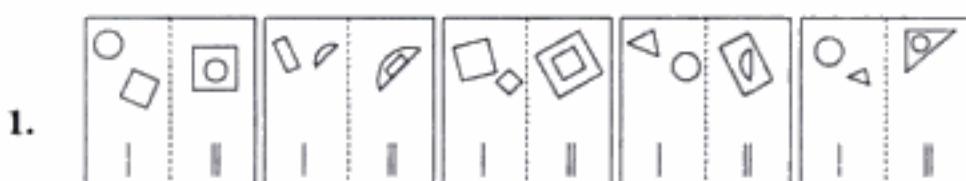
- 16.(e) The main figure change direction through clockwise motion.
- 17.(e) Double lines while in horizontal arrangement or vertical arrangement changing direction reduce to one and in change direction increase to two.

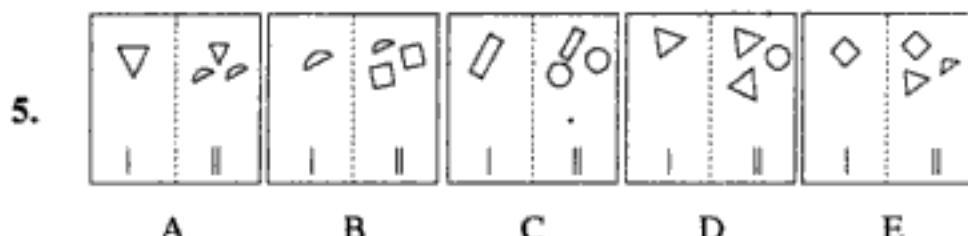
TYPE 4: PATTERN COMPARISON BETWEEN TWO SETS OF FIGURES

In these reasoning tests, you are given a set of figures, each figure is divided into two components I and II. Your task is to determine the relationship between the components I and II in each figure.

Illustrations

In each of the following questions, in 4 out of 5 figures, elements I and II are related in some way. Find out the figure in which the element I is not so related to element II?



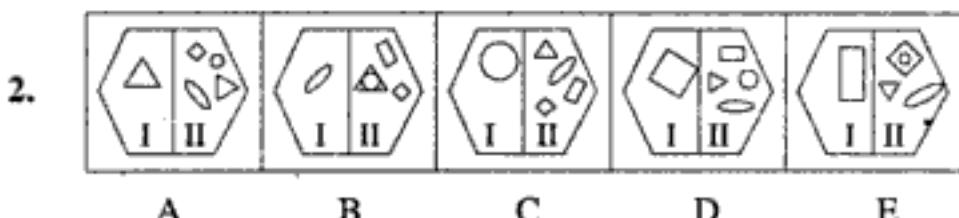
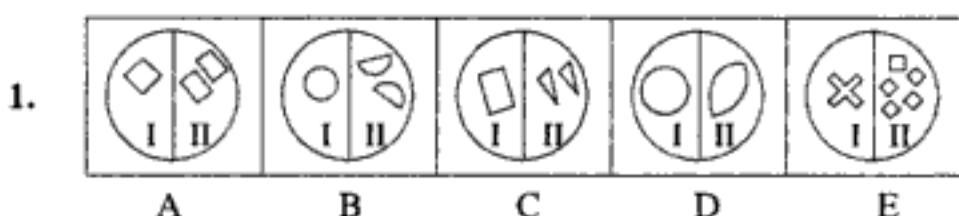


Answers and Explanations

- 1.(D) In each pair, one of the figures enlarges in the second part and encloses the other figure. Hence in D the triangle should have enlarged and enclosed the circle.
- 2.(D) In each pair, in the first part there is a large figure, which in the second part reduced in size and increases by one in number. Hence, in D, there should have been two small squares.
- 3.(E) The figure in part I of each pair reduces in size and doubles in number in Part II. In Part II, another figure is added to this reduced figure. Hence in E there should have been two semicircles along with a triangle or a circle.
- 4.(D) The figure in Part I is intersected by a similar design of smaller size in Part II. Hence in D the square intersecting the figure does not make an appropriate comparison is not correct.
- 5.(D) In the first part there is a figure which is repeated in the second part, along and E with two new identical figures. In D and E this pattern is not followed.

Practice Questions

In each of the following questions, in 4 out of 5 figures, elements I and II are related in some way. Find out the figure in which element I is not so related to element II.



3.



A

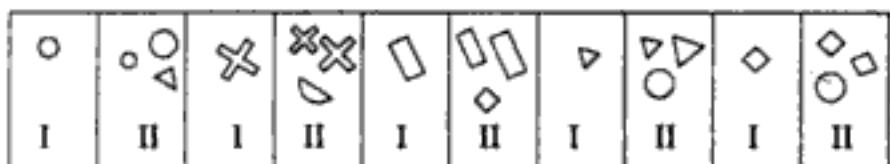
B

C

D

E

4.



A

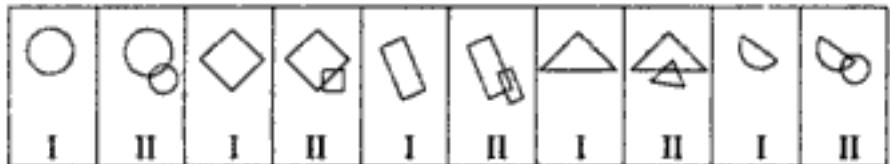
B

C

D

E

5.



A

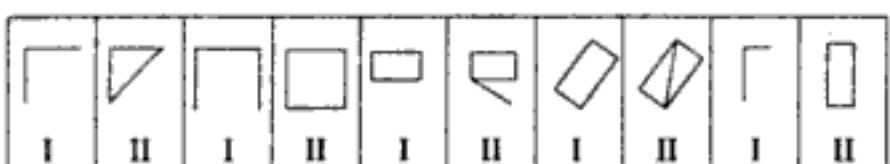
B

C

D

E

6.



A

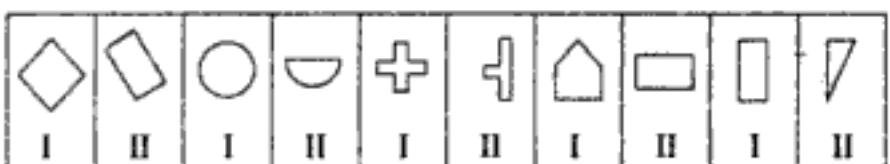
B

C

D

E

7.



A

B

C

D

E

Answers and Explanations

- 1.(D) In all the alternatives, the figure in element I can be disintegrated to make 2 or more figures in element II. But in D the figure is not divided or disintegrated.
- 2.(A) The figure in element I is never present in element II, except in alternative A.
- 3.(B) The figure in element I encloses a figure similar to that in element II in all the alternatives. Also, the enclosed figure is bisected into two parts one shaded and other white (unshaded). But in B the enclosed figure is not only bisected but the parts are also separated.

- 4.(E) The design of the first part is repeated in the second part along with its bigger version and a new design is added. In E there are two small squares. In fact one should have been slightly bigger.
- 5.(E) The design of the first part is intersected by a similar design smaller in size. In E in the second part instead of intersecting circle there should have been a small semicircle.
- 6.(E) One additional line is added in the second part. In E two lines have been added.
- 7.(D) The design of first part is bifurcated exactly in the middle making two identical half in the next figure.

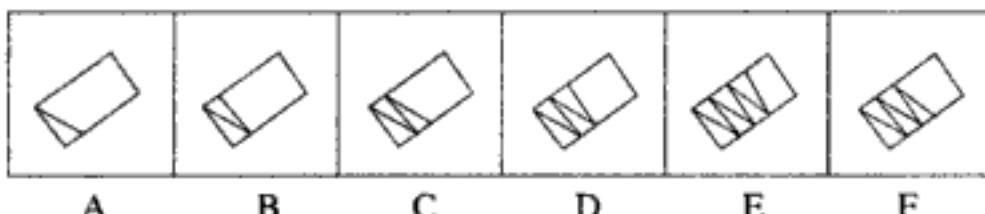
TYPE 5: ARRANGING FIGURES IN SEQUENCE

In this test you are required to arrange the given figures in a proper sequence or order. All the given figures have some common elements/similarities. However, they are not arranged in proper order. Your task is to arrange them in their natural sequence.

Illustrations

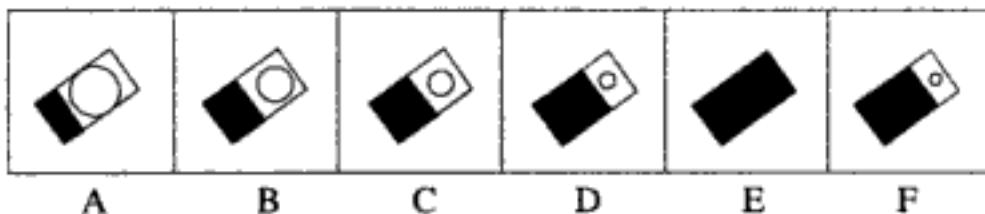
Identify the two figures from the following set of figures which are out of position and require interchange of positions to put the entire series in order.

1.

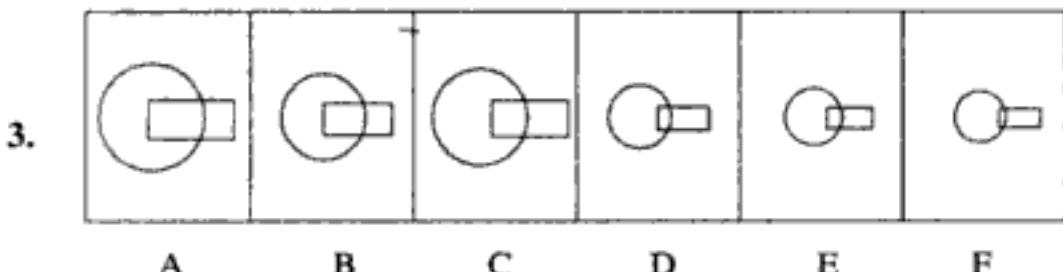


ANSWER: E and F In each figure, one line is increasing whereas in figure E there are six lines instead of five. Therefore to complete the pattern, the figure F should come in place of figure E and vice versa.

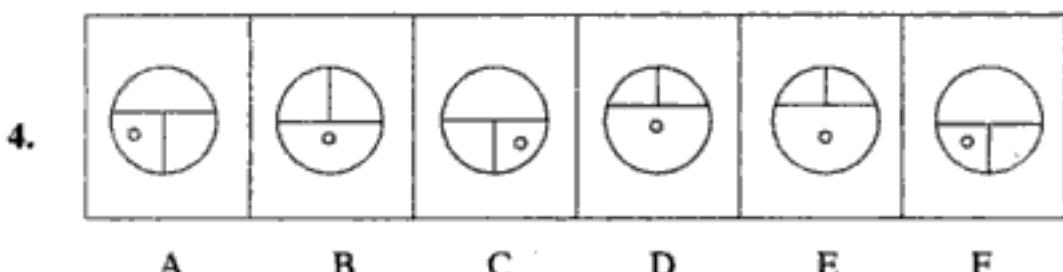
2.



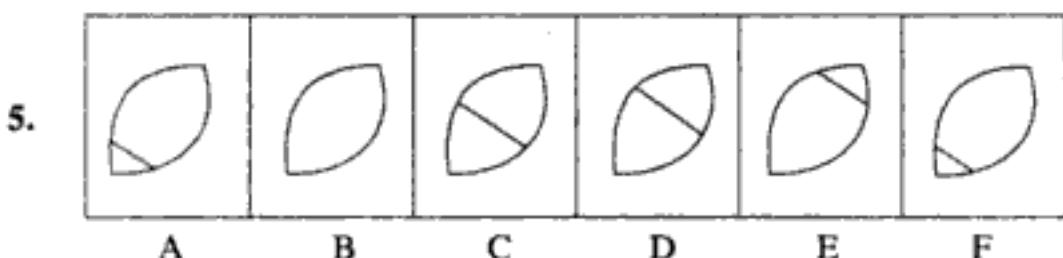
ANSWER: E and F The size of the circle decreases with the increase in the shaded portion. Therefore F should replace E and vice versa.



ANSWER: B and C In each figure the size of the circle and the rectangle decreases, whereas circle C is bigger than circle B. Therefore, figure C should be in place of figure B and vice versa.



ANSWER: E and F Figures E and F should be interchanged to maintain the continuity of the sequence.



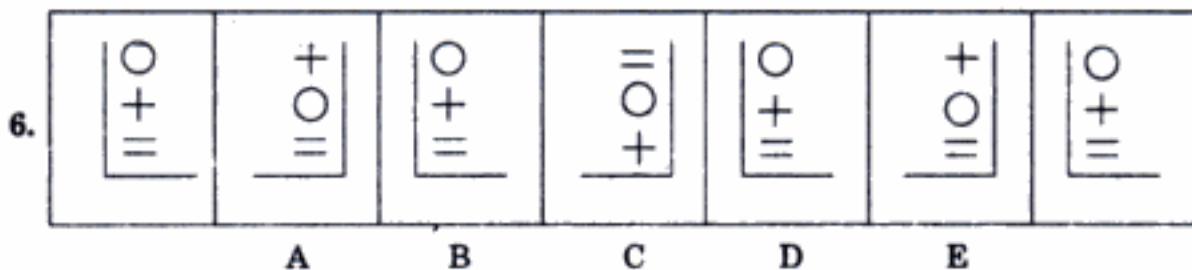
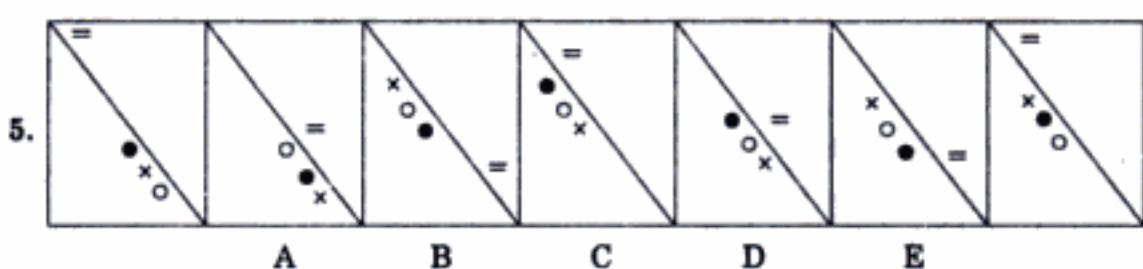
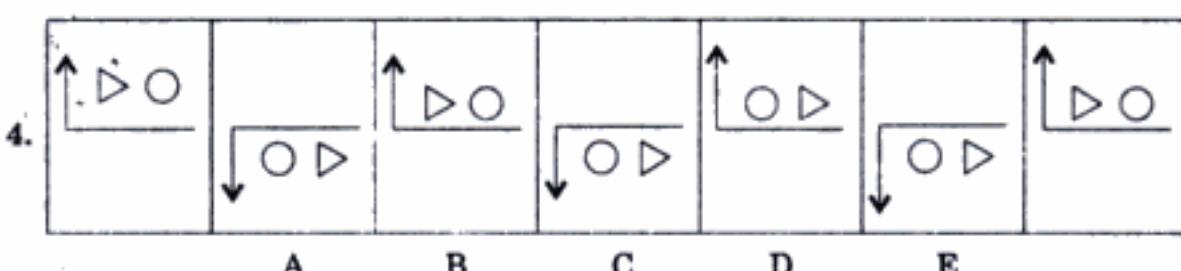
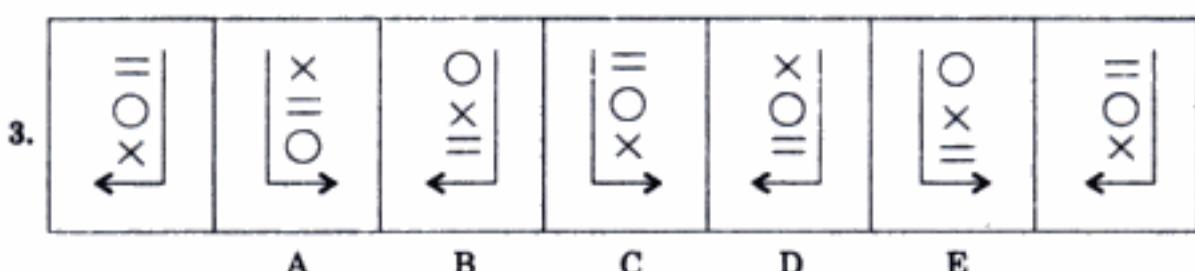
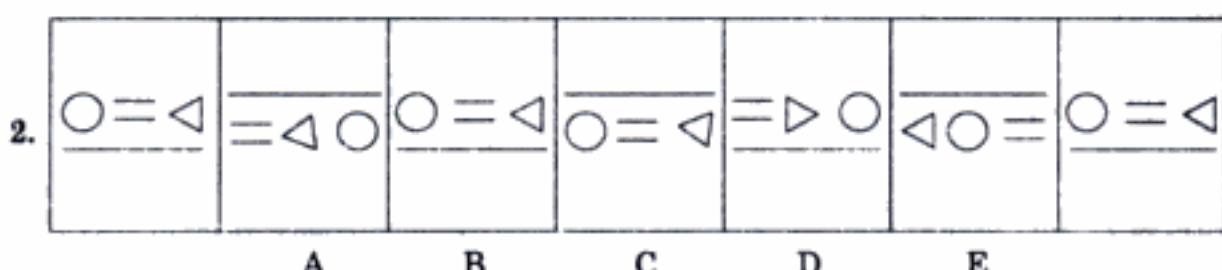
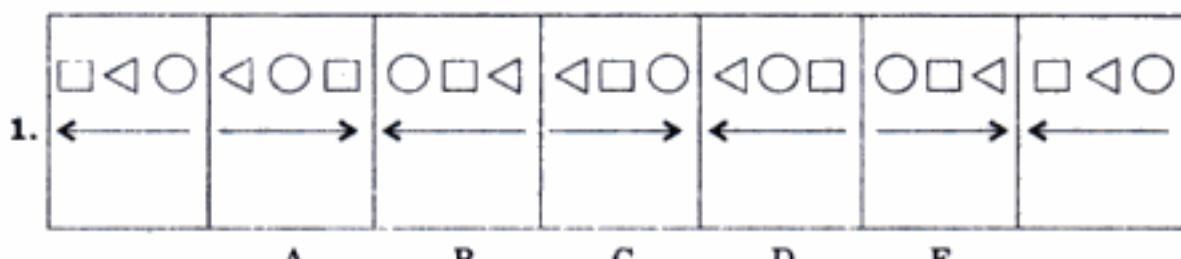
ANSWER: B and F Figure B should be in place of figure F and vice versa.

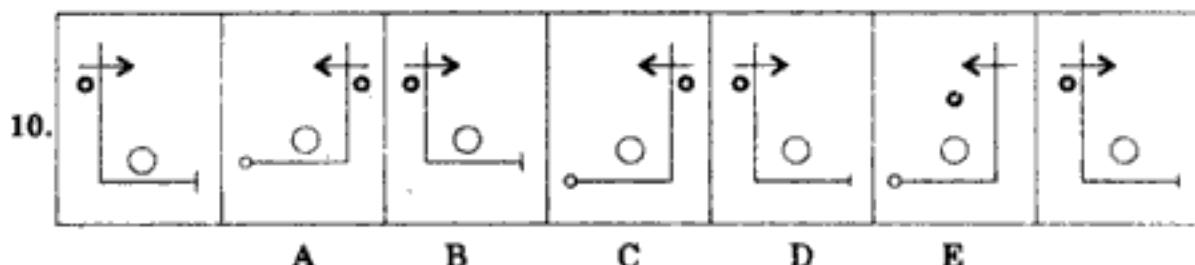
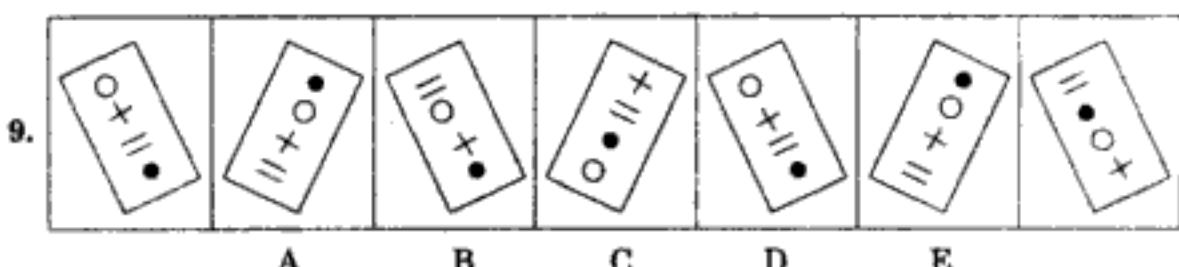
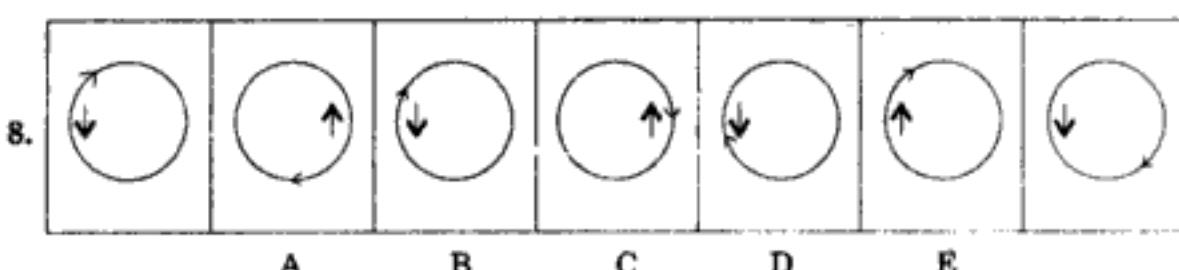
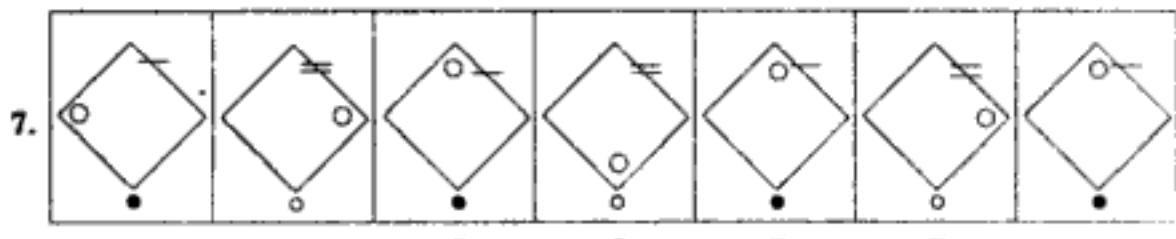
TYPE 6: DETECTION OF FIGURE OUT OF SERIES

In this type of reasoning test, a set of seven figures is given. The first and the last figures are in proper order but five figures, marked A, B, C, D and E are not in proper sequence. Your task is to rearrange these jumbled figures to form a series.

Illustrations

Directions: The figure at the extreme left starts the series and the figure at the extreme right (end) is the last figure of the series. In between, there are five figures marked A, B, C, D and E, out of which only one does not fit into the series. Select the figure which does not fit into the series.





Answers and Explanations

- 1.(C) A careful examination of these figures will reveal that out of three items (square, triangle and circle), the last item moves forward and remaining two follow. Hence in C when the circle moves forward, first the triangle and then the square should follow. Hence, the triangle should come in the middle.
- 2.(B) Same as above. In B the equal to sign (=) should be the right most item, followed by the circle and the triangle to its left.
- 3.(D) Same as above. The multiplication sign (\times) moves one place upward and the other items follow. Hence in D when the multiplication sign moves upward, the equal to sign (=) should come in the middle and the circle (o) should come at the bottom.
- 4.(D) The triangle and the circle, while moving up and down the arrow, change places.
- 5.(C) The black ball (•), the plus sign (+) and the circle (o) move from bottom to top. In C, therefore, the circle should be in the bottom and the plus sign at the centre.

- 6.(C) Here the item in the middle moves up. The other two items follow in the same order without change. '=' sign always remain at bottom.
- 7.(D) The circle (o) first moves from left to right, and then from top to bottom within the square. Hence, in D, the circle should have been on the left hand side and not at the top.
- 8.(E) The arrow inside the circle, while turning up and down, alternately moves from left to right.
- 9.(B) There are four items (black dot, equal to, plus and small circle). The item at the bottom takes the top position and other items follow without change.
- 10.(E) The black dot moves from left to right. Hence in E it should be towards the right.

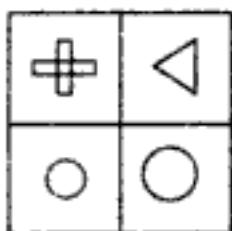
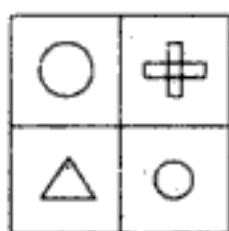
TYPE 7: MIRROR REFLECTION OF A PATTERN

In following questions, a key/main figure is given, under which four or five alternative figures are given. Your task is to identify the figure that is the mirror reflection of the main figure. For this identification, remember that the mirror image is always opposite to the original and of the same size.

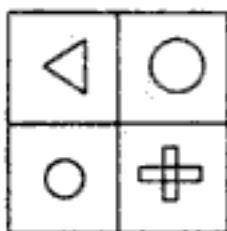
Illustrations

Which of the answer figures, marked A, B, C and D is exactly the mirror image of the key/main figure?

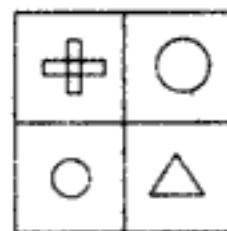
1.



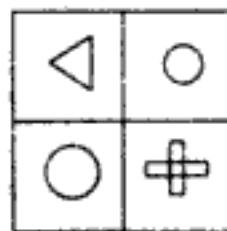
A



B



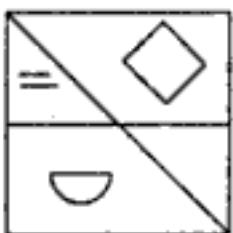
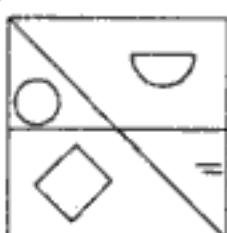
C



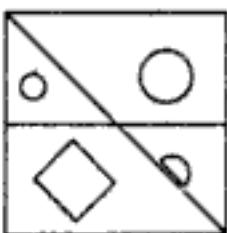
D

ANSWER: C

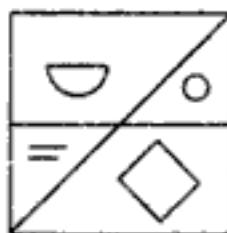
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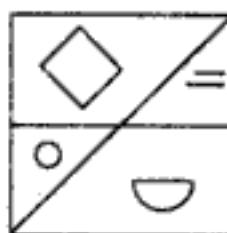
A



B



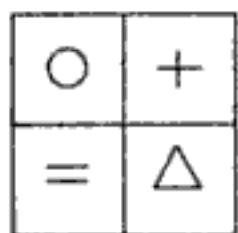
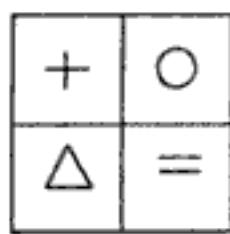
C



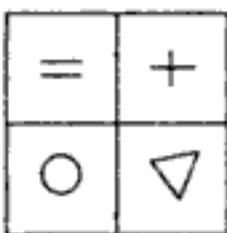
D

ANSWER: C

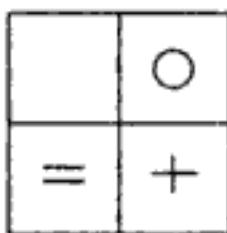
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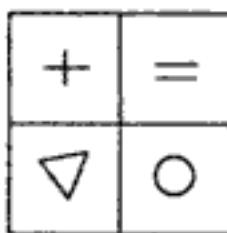
A



B



C

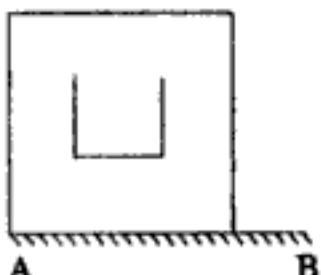


D

ANSWER: A

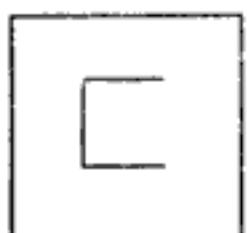
Directions: Which of the answer choices marked A, B, C and D is the mirror image of the key figure, when the mirror is held at AB?

4. Key Figure

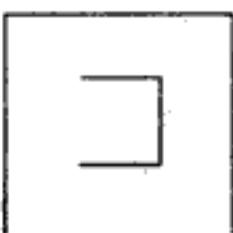


A

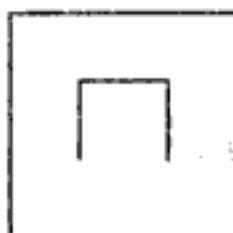
B



A



B



C

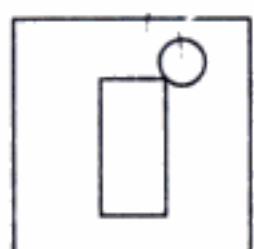
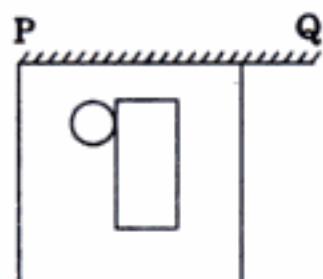
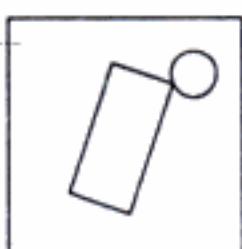
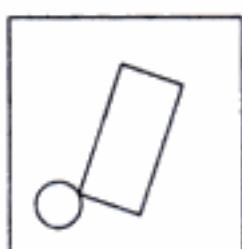
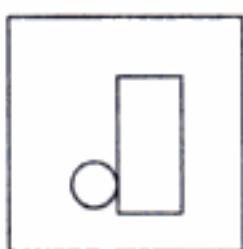


D

ANSWER: C

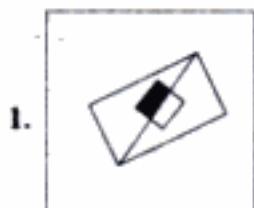
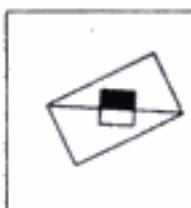
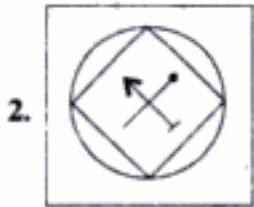
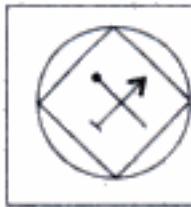
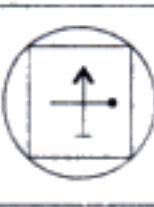
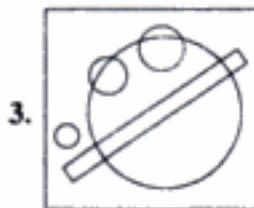
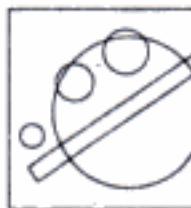
Directions: Which of the answer figures A, B, C and D is the mirror image of the key figure when the mirror is held at PQ?

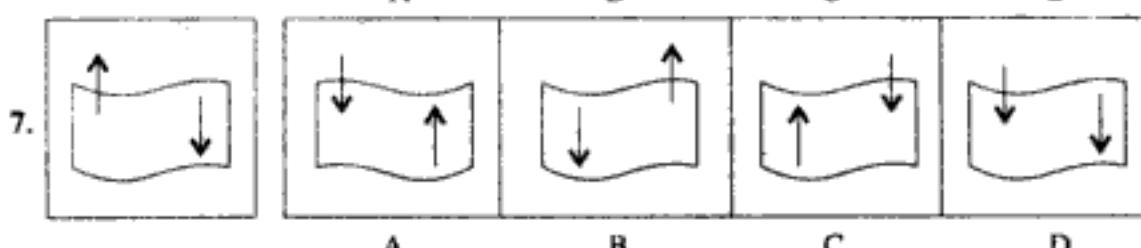
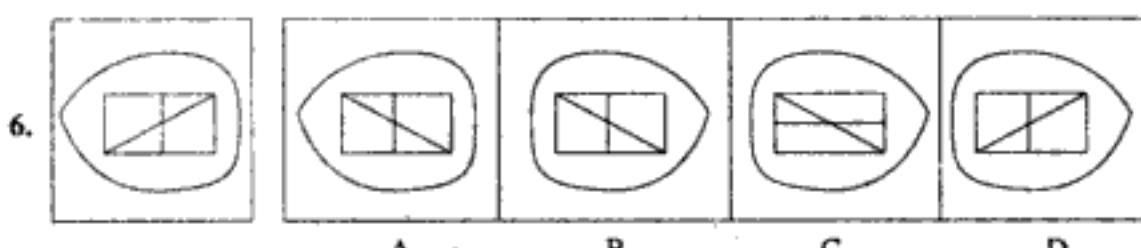
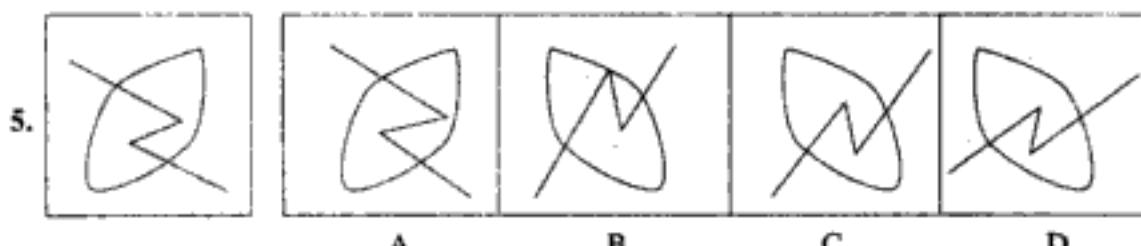
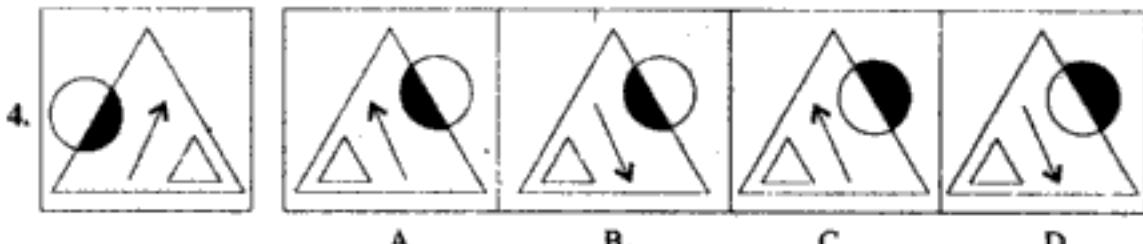
5. Key Figure

**A****B****C****D****ANSWER: D**

Practice Questions

Directions: Which of the following choices is the exact mirror image of the main figure. (Please note that the mirror is present on the left side of the main figure).

**1.****A****B****C****D****2.****A****B****C****D****3.****A****B****C****D**



Answers : 1.(C) 2. (A) 3. (B) 4. (A) 5. (D) 6. (B) 7. (B)

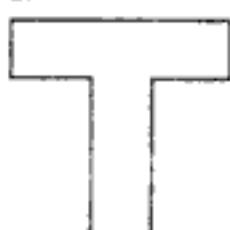
TYPE 8: DETECTION OF HIDDEN FIGURE IN A GIVEN PATTERN

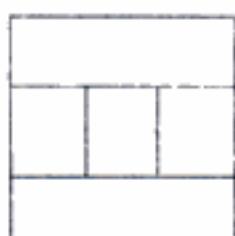
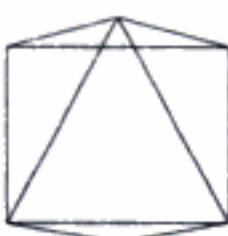
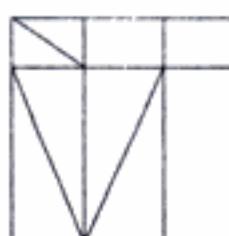
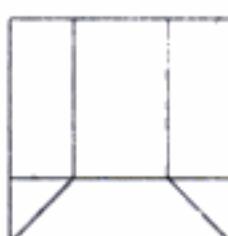
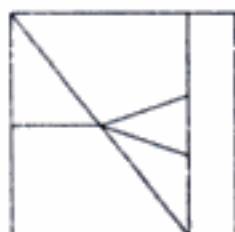
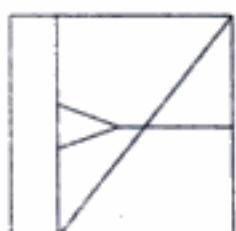
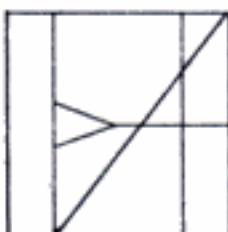
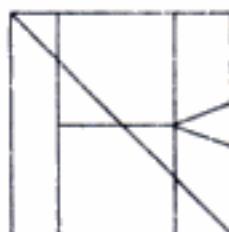
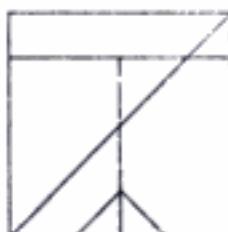
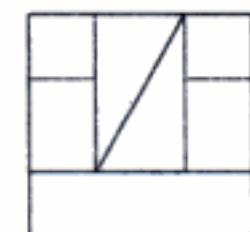
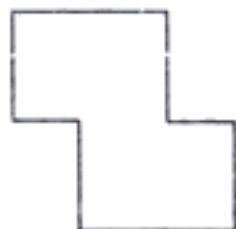
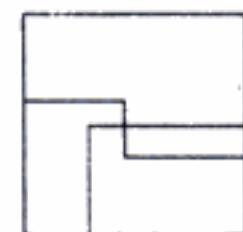
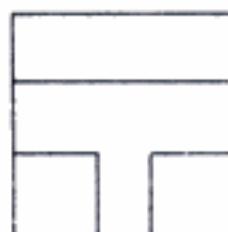
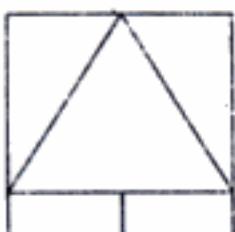
These non-verbal tests are designed to judge your sense of observation and analytical ability. A key or main figure is given, followed by four or five answer choices. In one of these answer figures a main design, given in the key/main figure, is hidden. Your task is to identify the hidden figure in the main figure from amongst the answer choices.

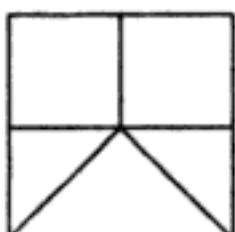
Illustrations

Each of the following questions has a problem figure and four answer figures. You have to select from the answer figures the alternative that contains the hidden design/pattern of the problem figure.

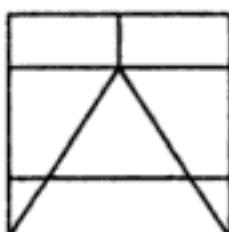
1.



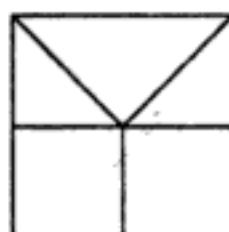
**A****B****C****D**ANSWER: **C****2.****A****B****C****D**ANSWER: **B****3.****A****B****C****D**ANSWER: **D****4.**



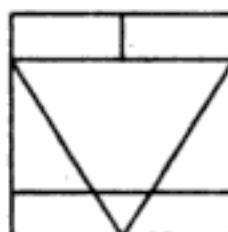
A



B



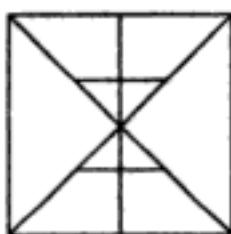
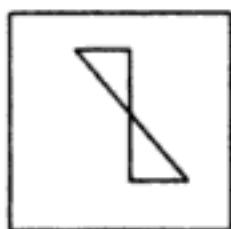
C



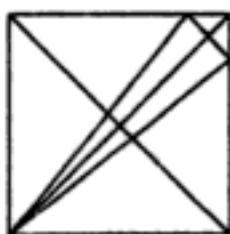
D

ANSWER: D

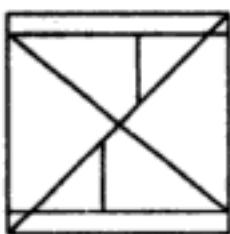
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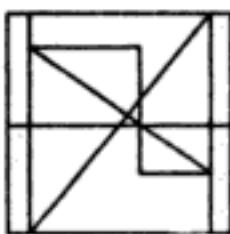
A



B



C

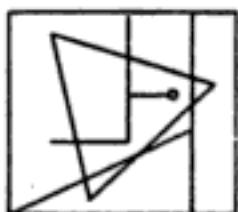
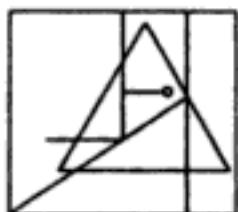


D

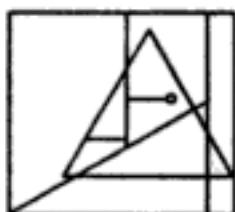
ANSWER: D

Practice Questions

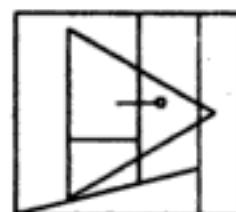
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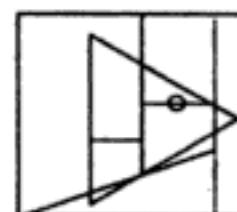
A



B

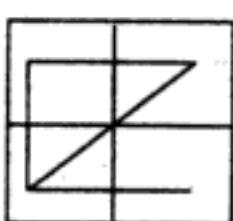
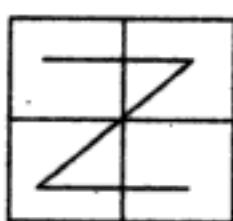
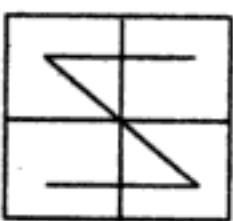
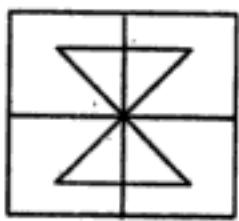
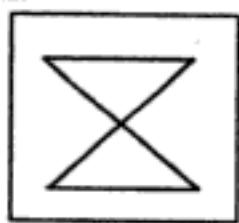


C



D

2.



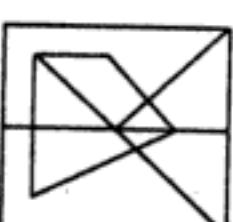
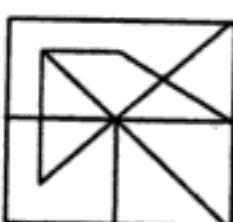
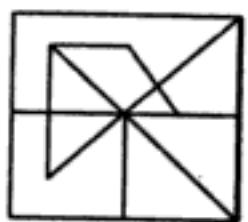
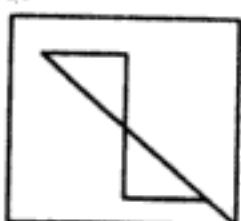
A

B

C

D

3.



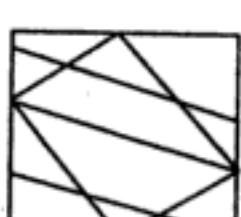
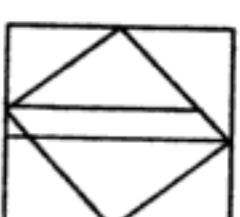
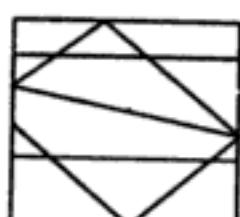
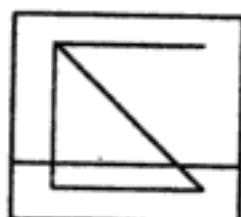
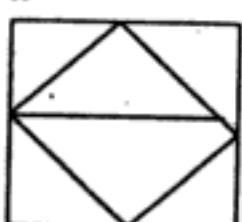
A

B

C

D

4.



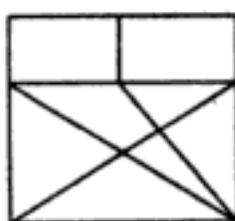
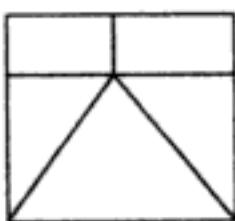
A

B

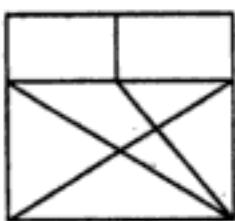
C

D

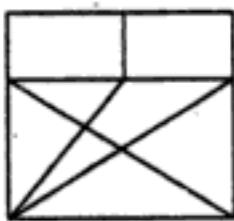
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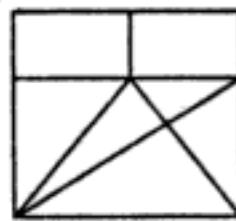
A



B

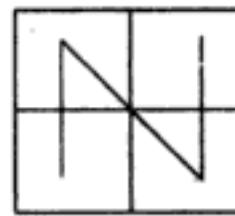
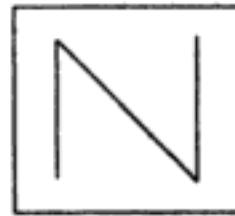


C

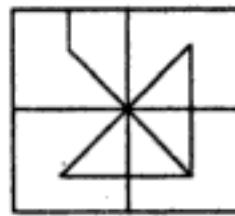


D

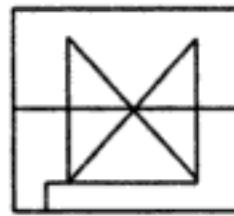
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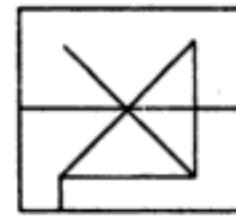
A



B

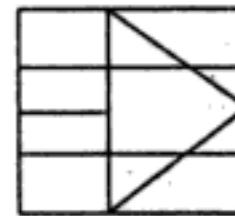
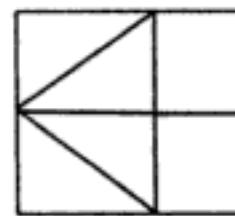


C

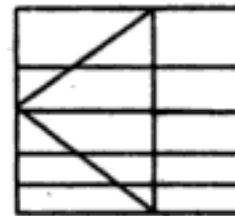


D

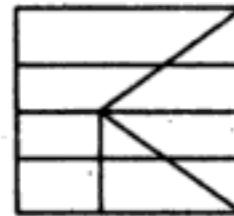
7.



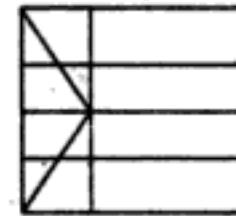
A



B



C



D

Answers:

1. (B)
2. (A)
3. (D)
4. (C)
5. (D)
6. (A) and (C)
7. (B)

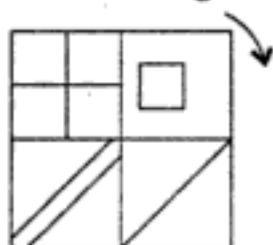
TYPE 9: FIGURES ROTATION

In these questions, the question figure, which comprises various components, is rotated one step in a particular direction (clockwise or anticlockwise.) You have to identify its rotated form from the given answer figures.

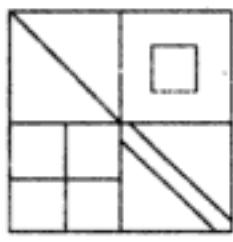
Illustrations

Directions: When the key figure (or the main figure) is rotated one step clockwise, which of the answer figures will represent the main figure in the rotated form?

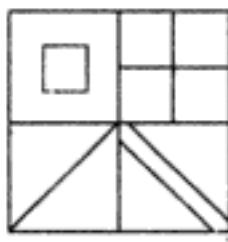
1. Main Figure



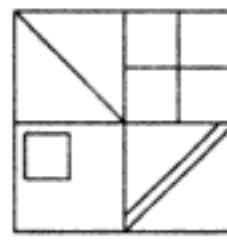
Answer Figures



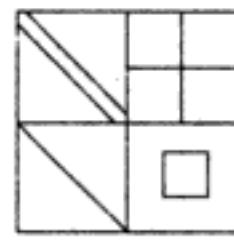
1



2



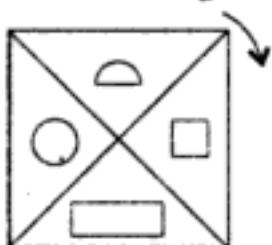
3



4

ANSWER (4)

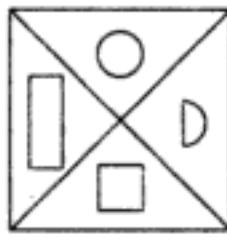
2. Main Figure



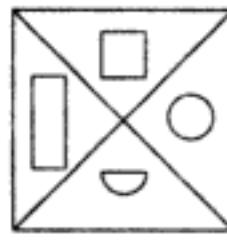
Answer Figures



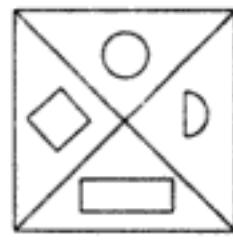
1



2



3

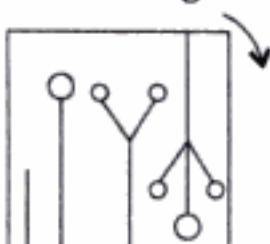


4

ANSWER: 2

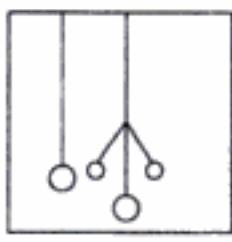
Directions: When the key figure is rotated one step clockwise, which of the answer figures given will represent the main figure in the rotated form?

3. Main figure

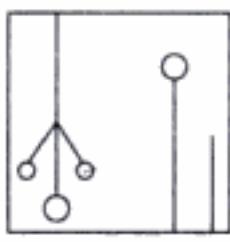


ANSWER: 3

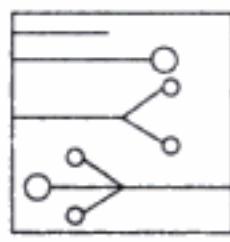
4. Main Figure



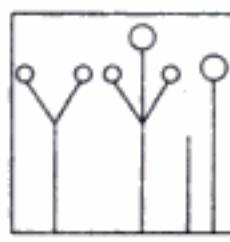
1



2

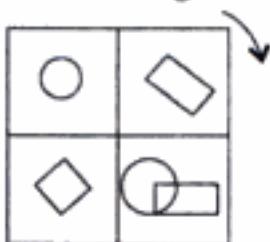


3

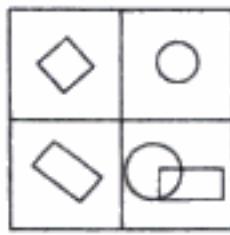


4

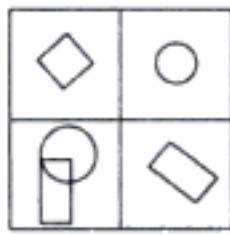
Answer Figures



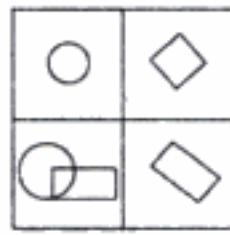
ANSWER: 2



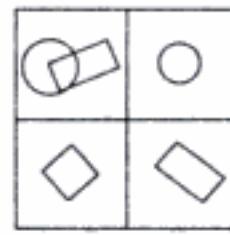
1



2



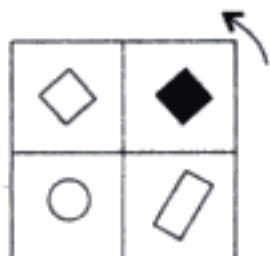
3

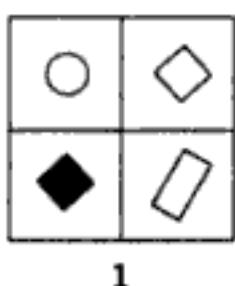


4

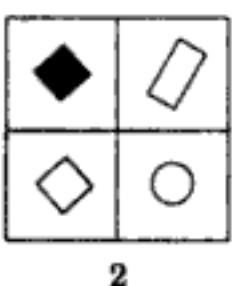
Directions: When the key figure (or the main figure) is rotated one step anti-clockwise, which of the answer figures will represent the main figure in the rotated form?

5. Main figure

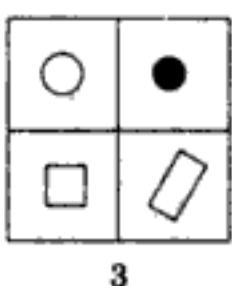


Answer Figures

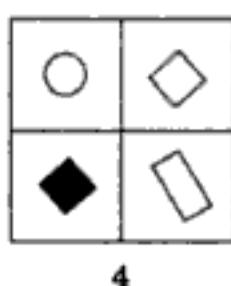
1



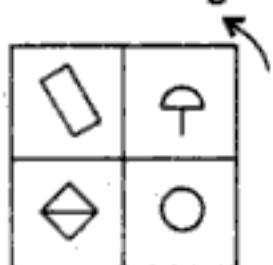
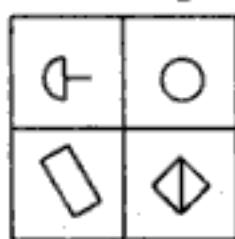
2



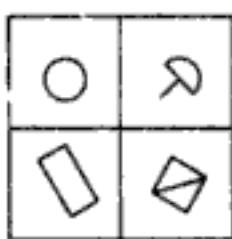
3



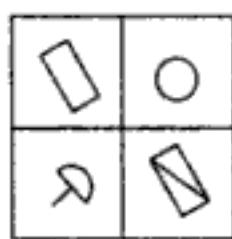
4

ANSWER: 2**6. Main Figure****Answer Figures**

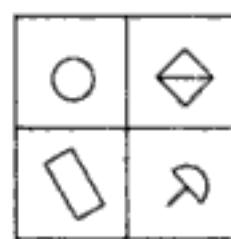
1



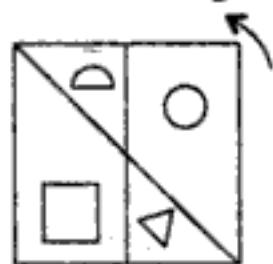
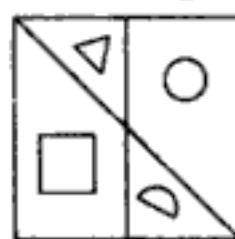
2



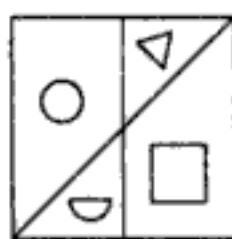
3



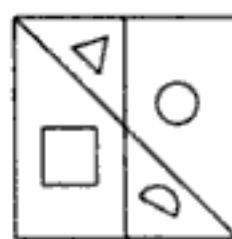
4

ANSWER: 1**7. Main Figure****Answer Figures**

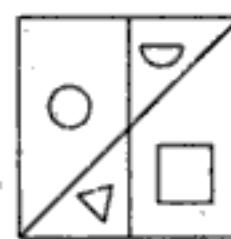
1



2



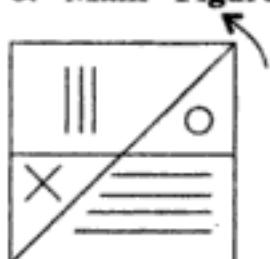
3



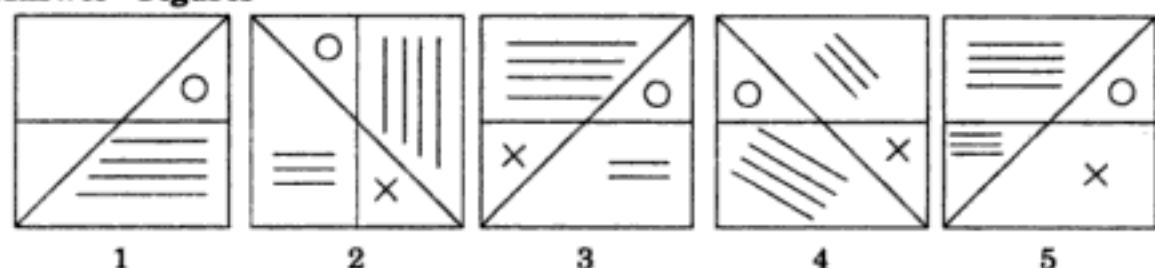
4

ANSWER: 2

8. Main Figure

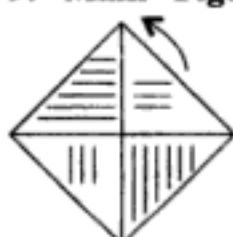


Answer Figures

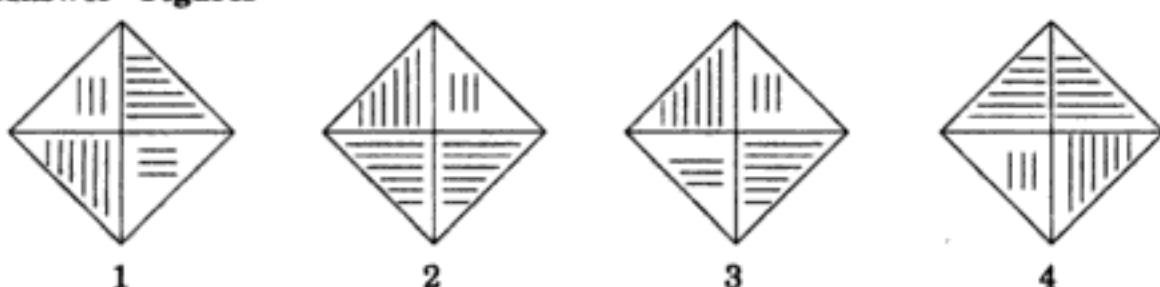


ANSWER: 2

9. Main Figure

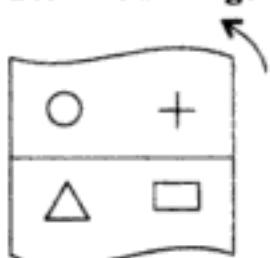


Answer Figures

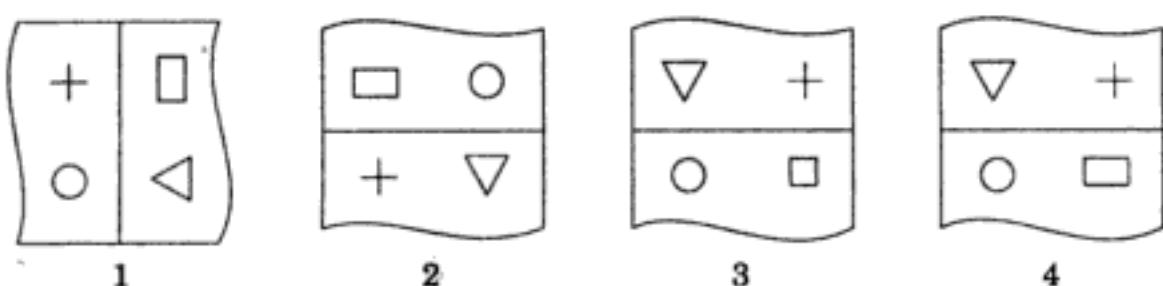


ANSWER: 1

10. Main Figure



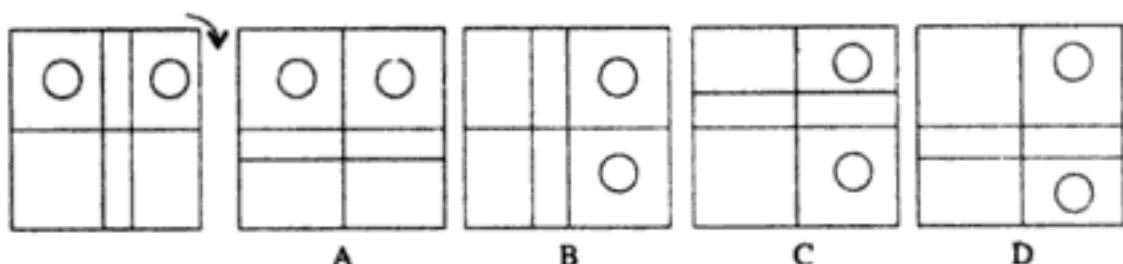
Answer Figures



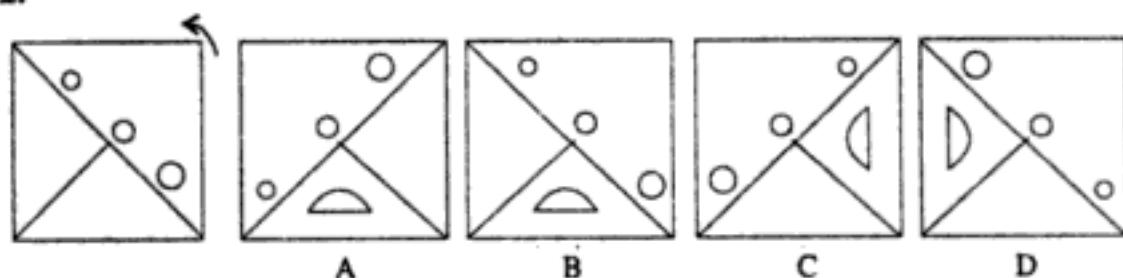
ANSWER: 1

Practice Questions

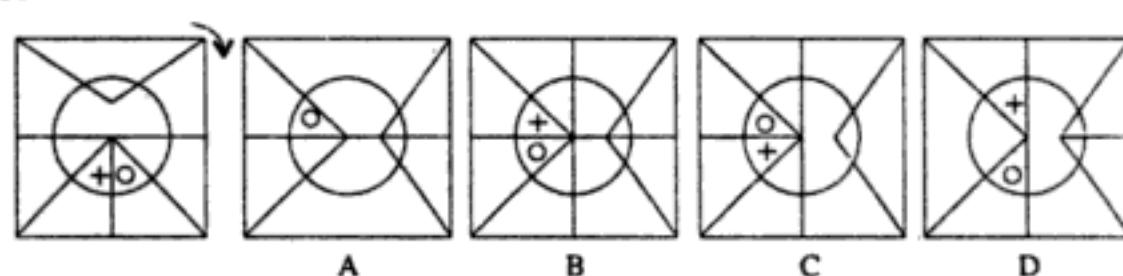
1.



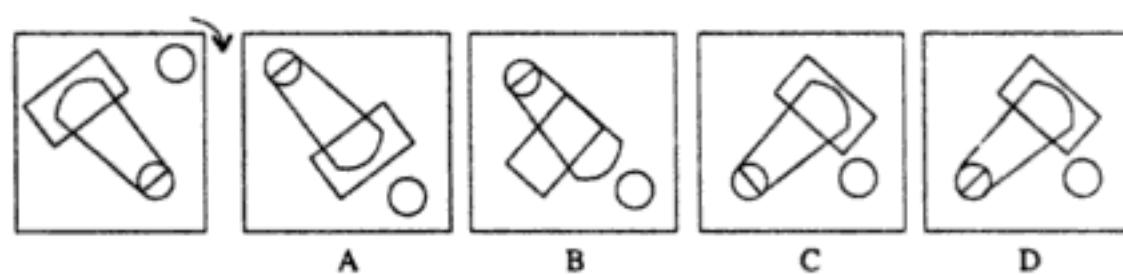
2.



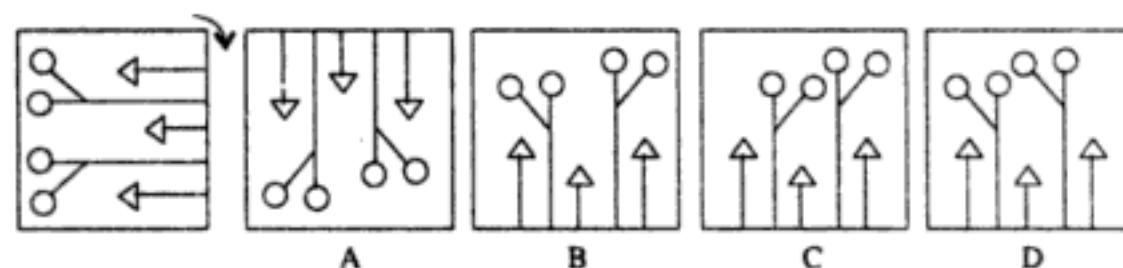
3.



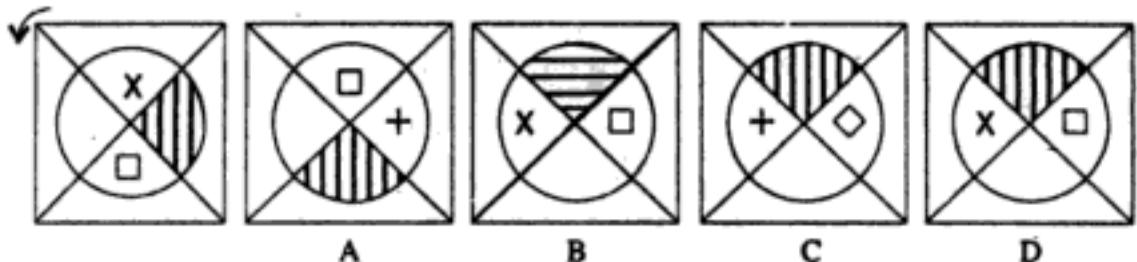
4.



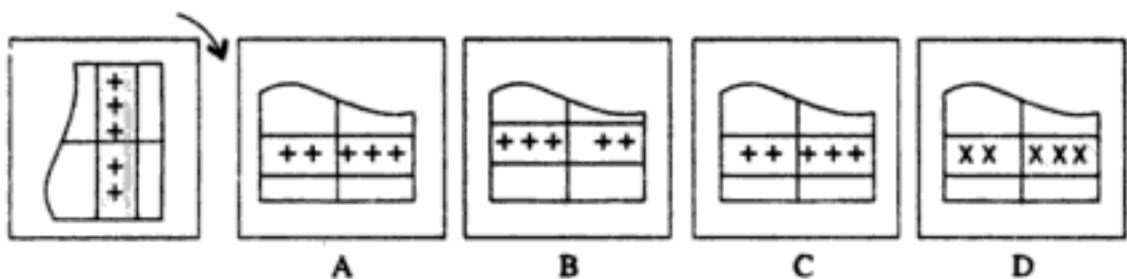
5.



6.



7.



Answers: 1. (D) 2. (A) 3. (B) 4. (C) 5. (B) 6. (B) 7. (C)

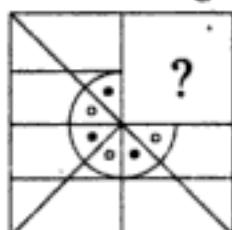
TYPE 10: PATTERN COMPLETION TESTS

These tests are developed to judge your ability to comprehend geometric figures and diagrams. These also test your skills in perceiving the structure of a design and identifying the part missing in the main figure from the answer choices given. In the given figure, a portion is left blank or incomplete. Below the main figure you will find answer choices, each containing some part of the main figure. Your task is to select the answer which fits into the blank space so that the main figure is completed.

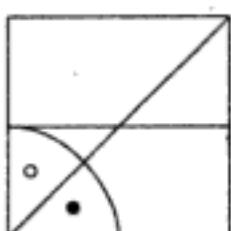
Illustrations

Directions: Select from the answer choices the figure that fits in the main figure to complete its original design/pattern.

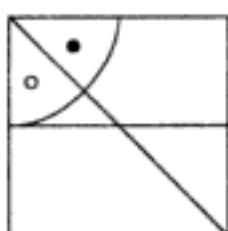
1. Main figure



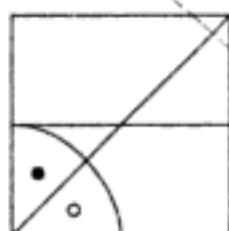
Answer Choice



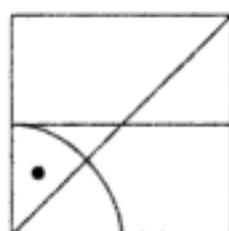
1



2



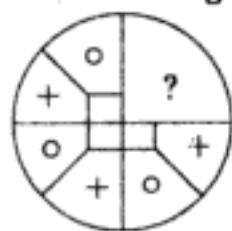
3



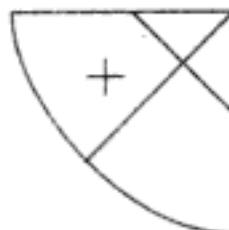
4

ANSWER: 1

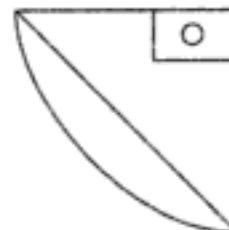
2. Main Figure



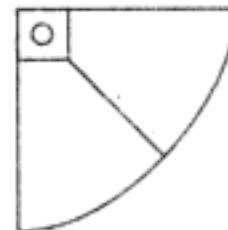
Answer Choice



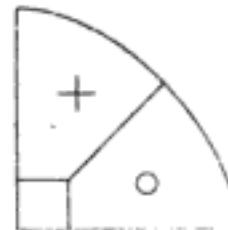
1



2



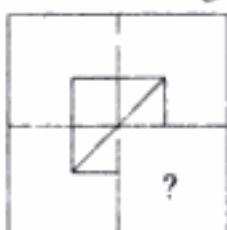
3



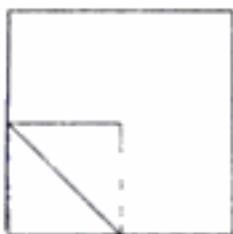
4

ANSWER: 4

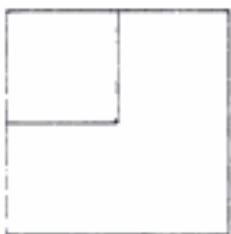
3. Main Figure



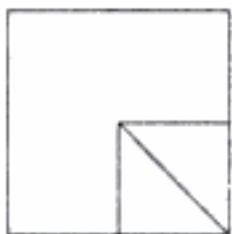
Answer Choices



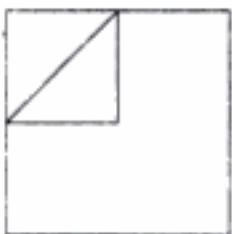
1
ANSWER: 2



2

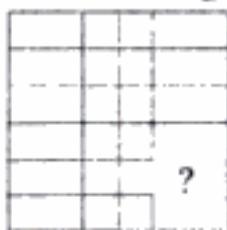


3

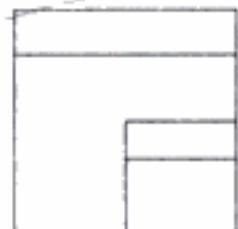


4

4. Main Figure



Answer Choices



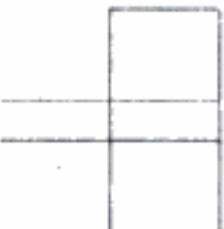
1
ANSWER: 4



2

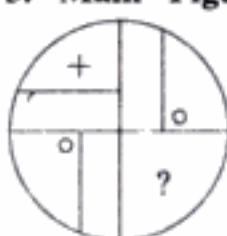


3

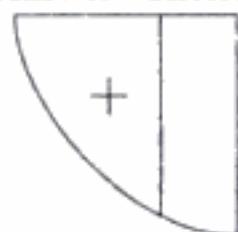


4

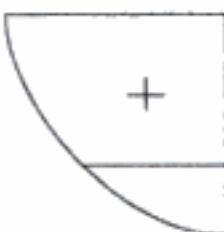
5. Main Figure



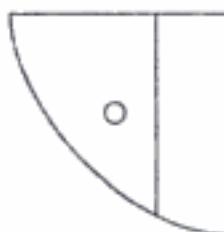
Answer Choices



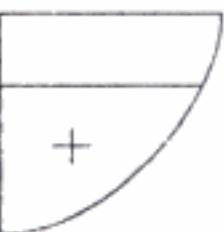
1
ANSWER: 4



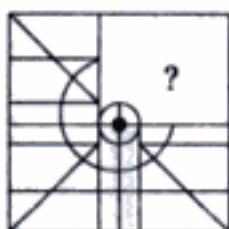
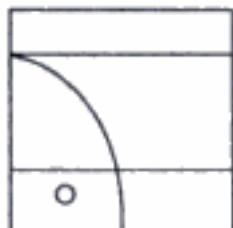
2



3

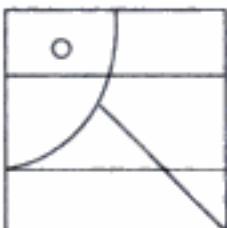


4

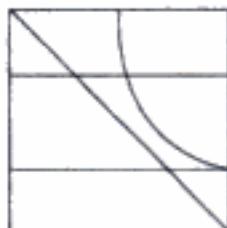
6. Main Figure**Answer Choices**

1

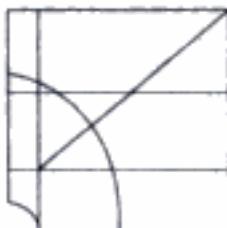
ANSWER: 4



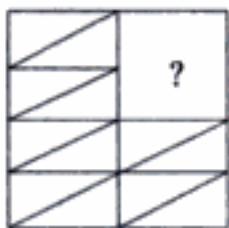
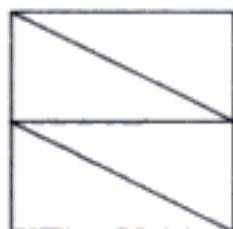
2



3

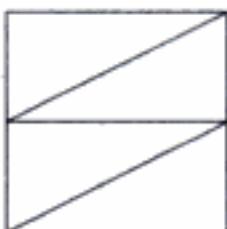


4

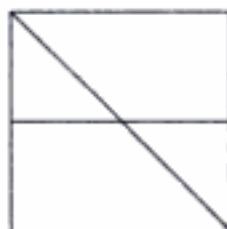
7. Main Figure**Answer Choices**

1

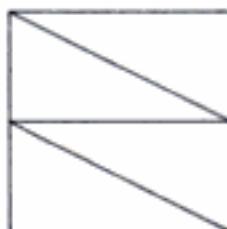
ANSWER: 2



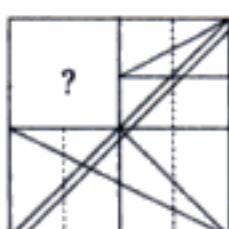
2



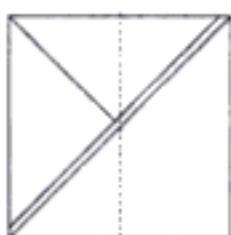
3



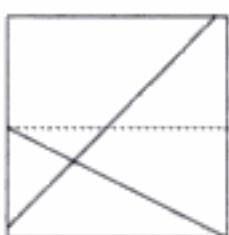
4

8. Main Figure

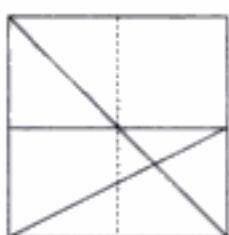
Answer Choices



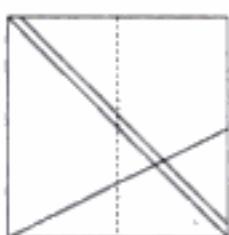
1



2



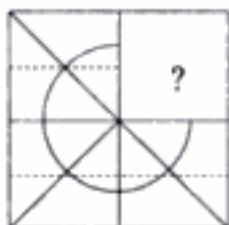
3



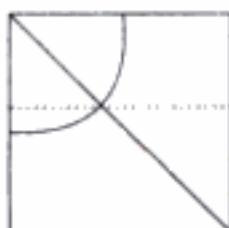
4

ANSWER: 3

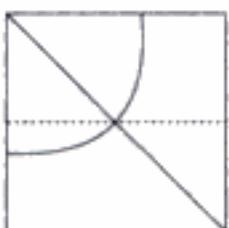
9. Main Figure



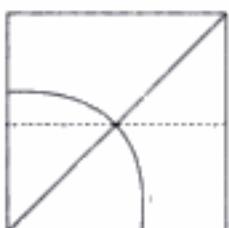
Answer Choices



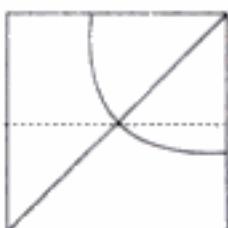
1



2



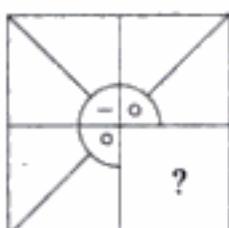
3



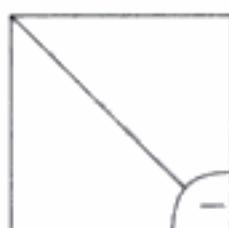
4

ANSWER: 3

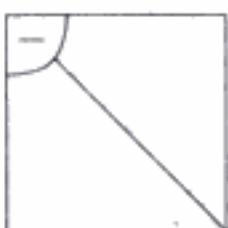
10. Main Figure



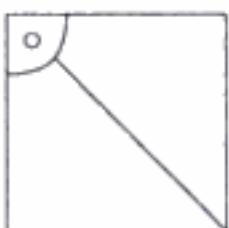
Answer Choices



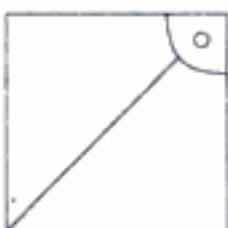
1



2



3

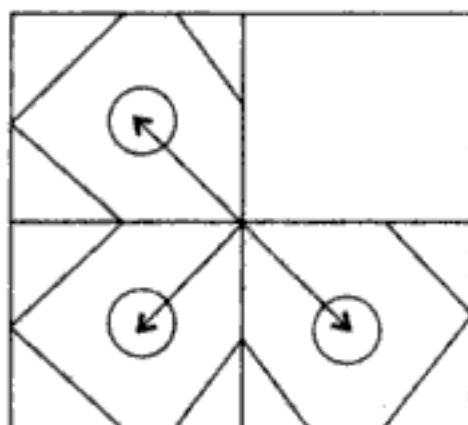


4

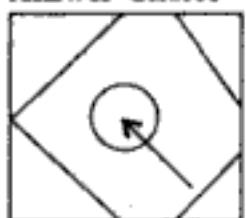
ANSWER: 2

Practice Questions

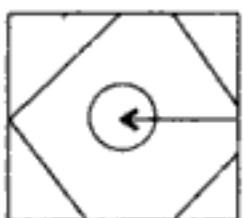
1. Main Figure



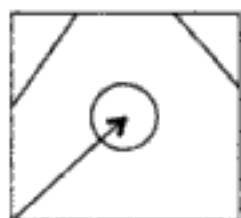
Answer Choice



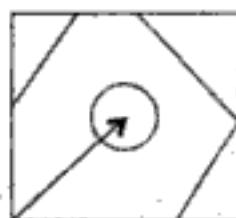
A



B

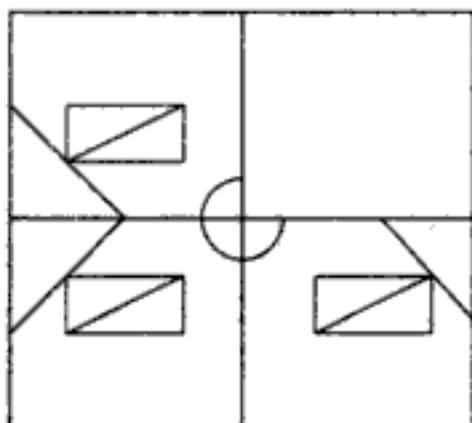


C

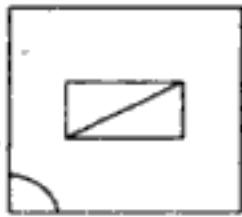


D

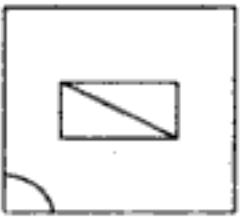
2. Main Figure



Answer Choice



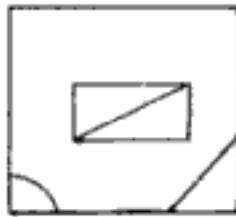
A



B

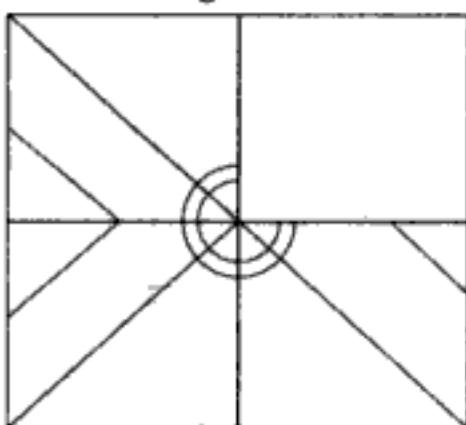


C



D

3. Main Figure



Answer Choice



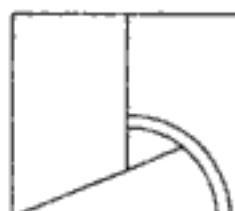
A



B

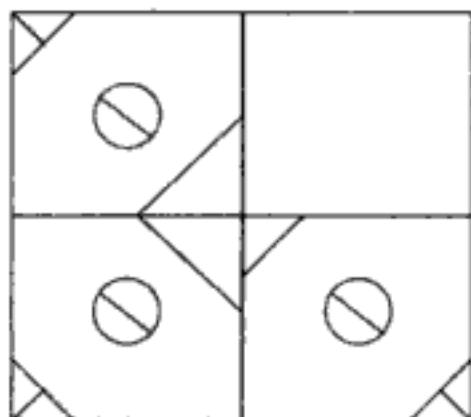


C



D

4. Main Figure



Answer Choice



A



B

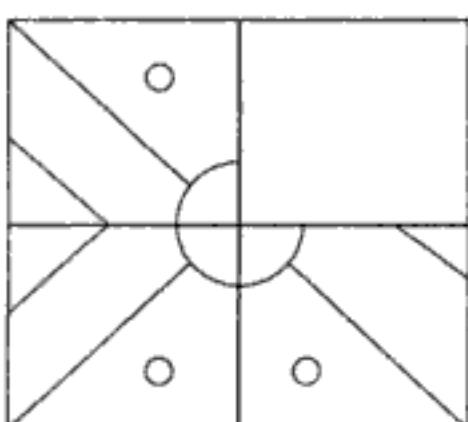


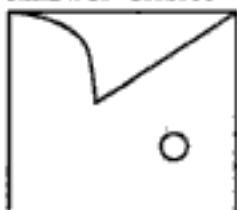
C



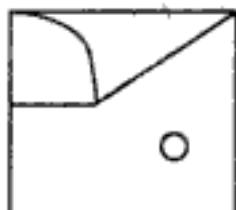
D

5. Main Figure



Answer Choice

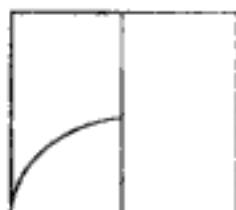
A



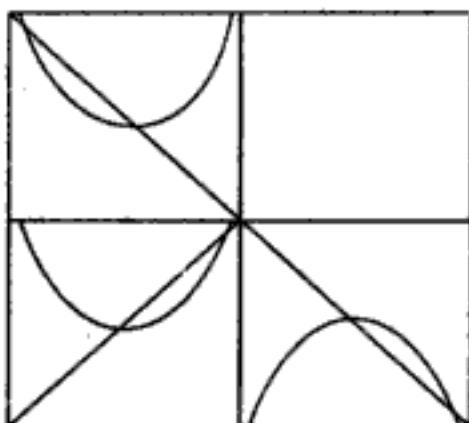
B



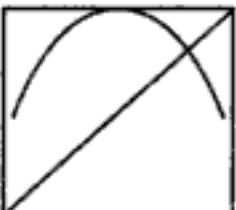
C



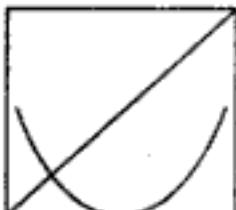
D

6. Main Figure**Answer Choice**

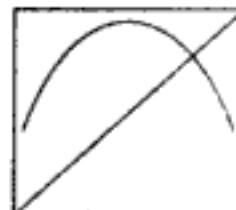
A



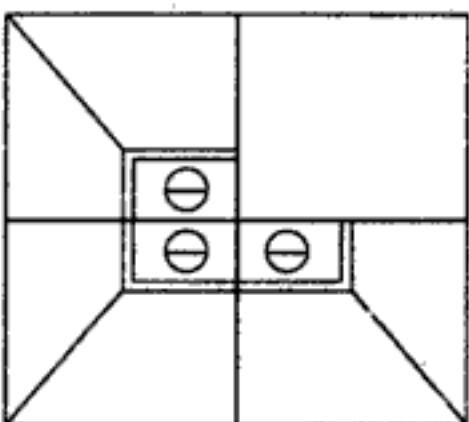
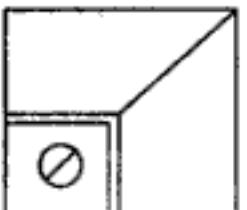
B



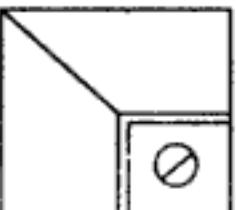
C



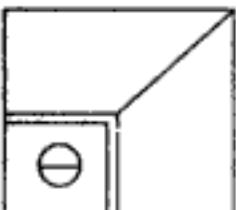
D

7. Main Figure**Answer Choice**

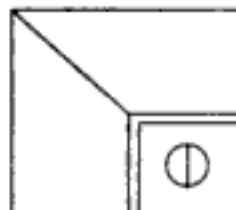
A



B



C



D

ANSWERS: (1) D (2) D (3) C (4) B (5) C (6) A (7) C

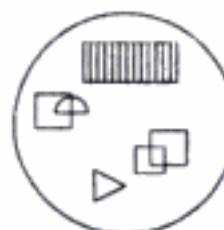
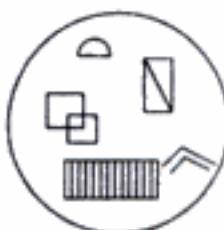
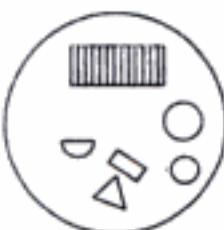
TYPE 11: PATTERN COMPARISON

These questions test your speed in recognizing the components of a given figure. There will be a main figure composed of various small elements. Your task is to identify from the given choices, the figure which comprises maximum patterns given in the main figure.

Illustrations

In the following questions, which of the alternative figures has the maximum number of items or components of the main figure?

Main Figure



1

2

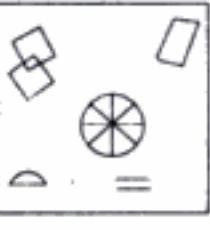
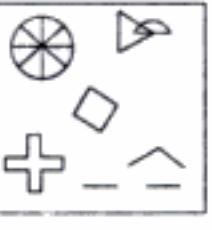
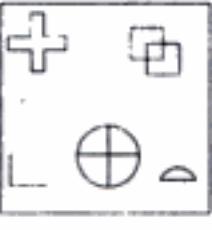
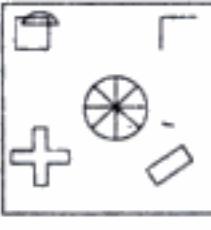
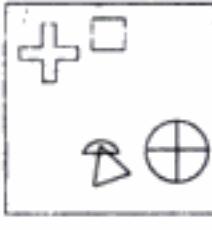
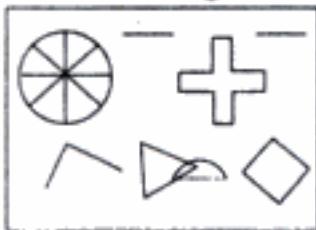
3

4

5

ANSWER: 1

2. Main Figure



1

2

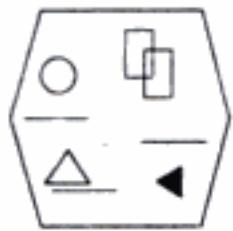
3

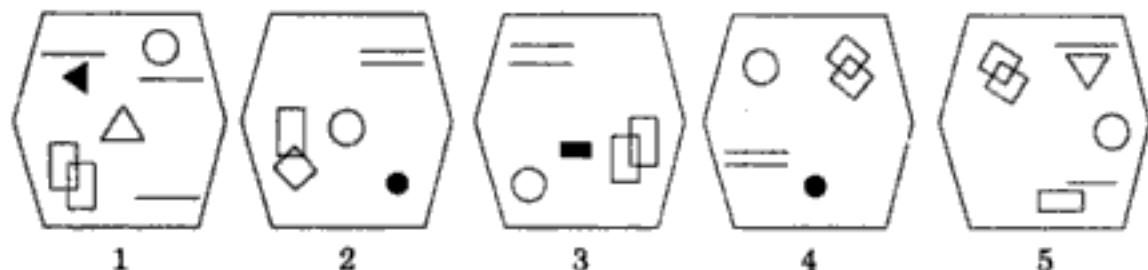
4

5

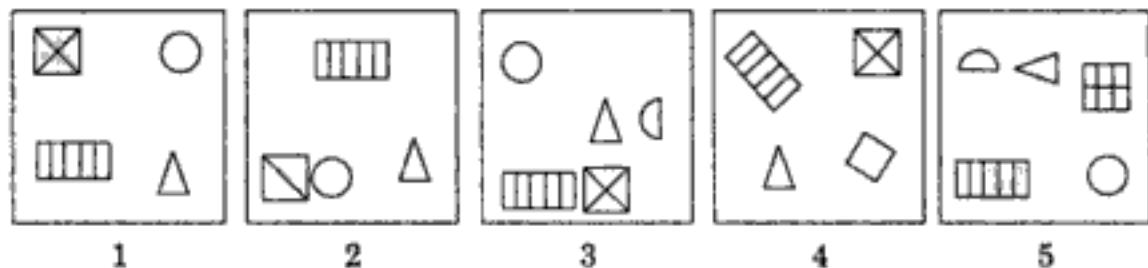
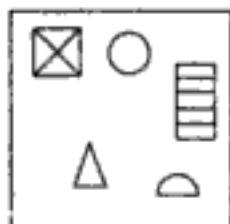
ANSWER: 4

3. Main Figure

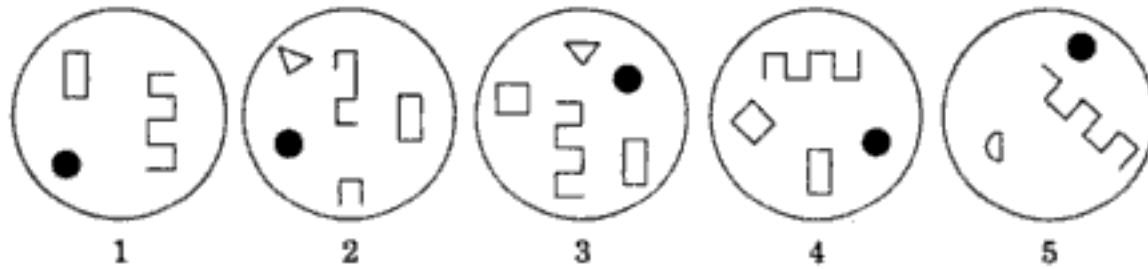
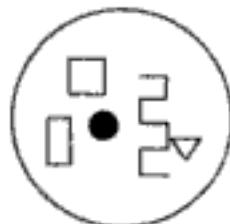




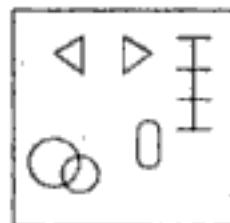
ANSWER: 1

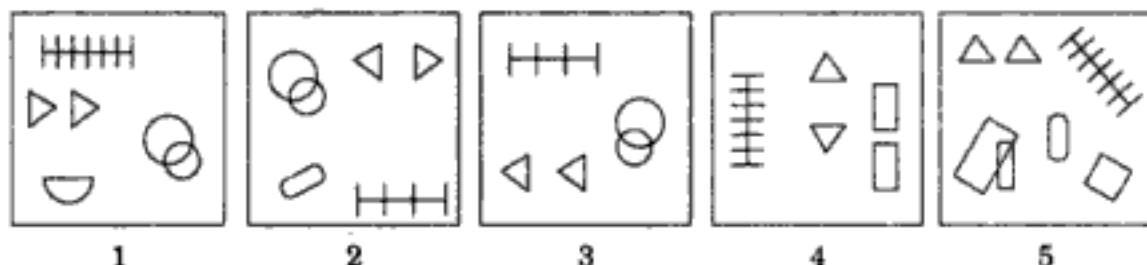
4. Main Figure

ANSWER: 3

5. Main Figure

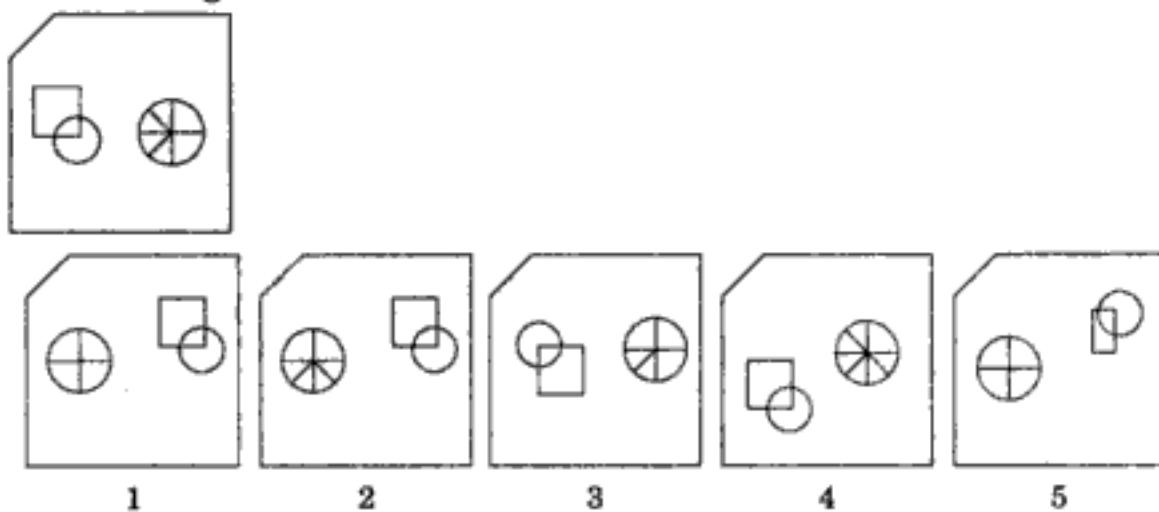
ANSWER: 3

6. Main Figure



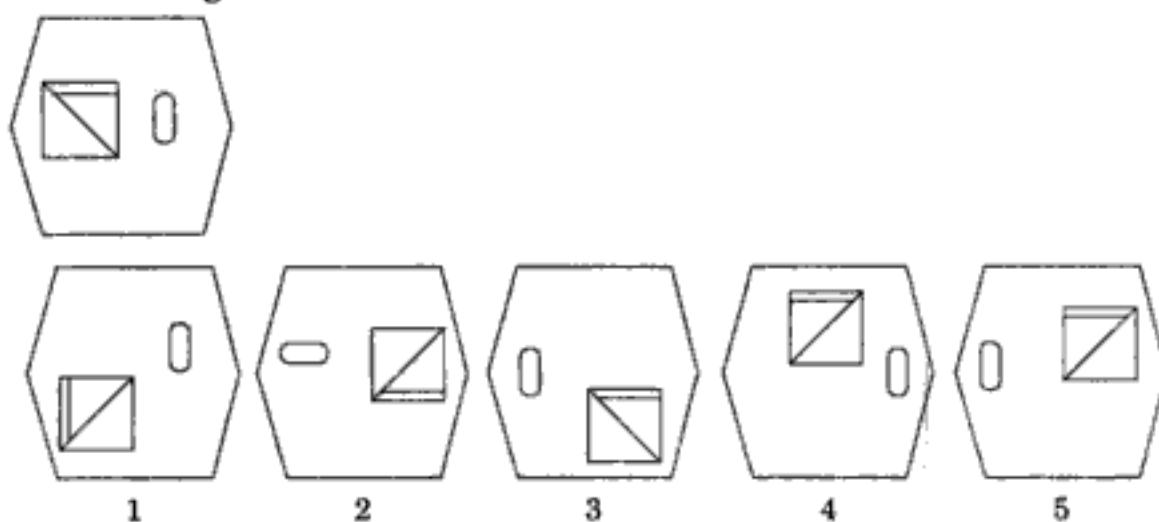
ANSWER: 2

7. Main Figure



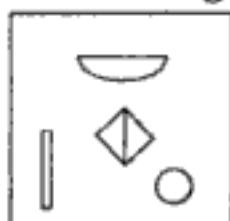
ANSWER: 2

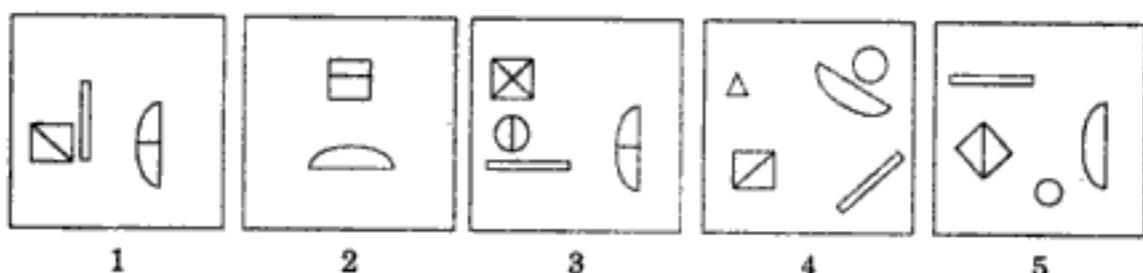
8. Main Figure



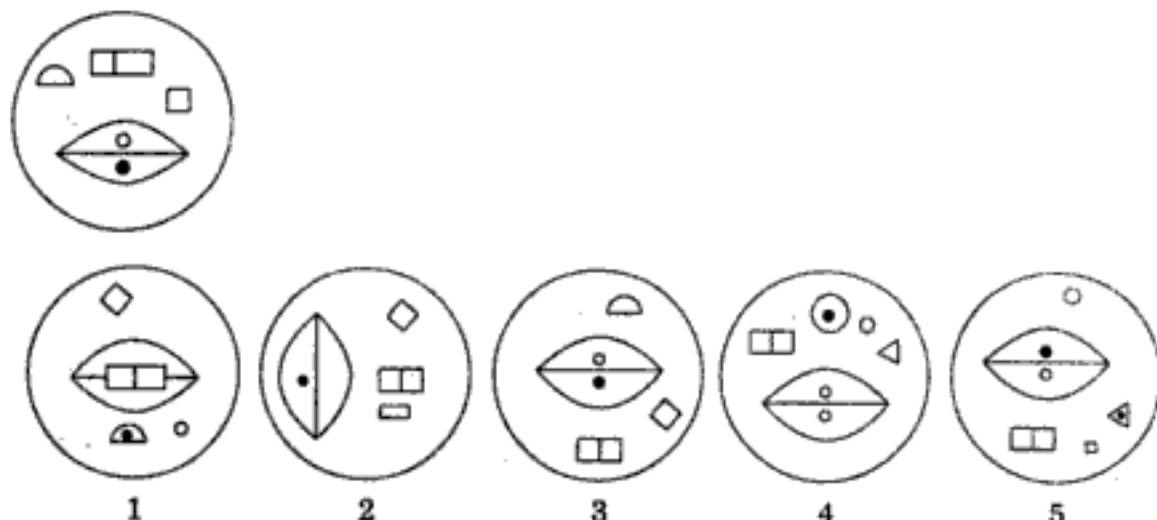
ANSWER: 3

9. Main Figure





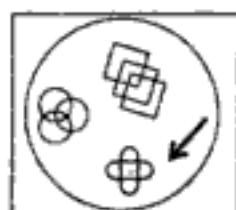
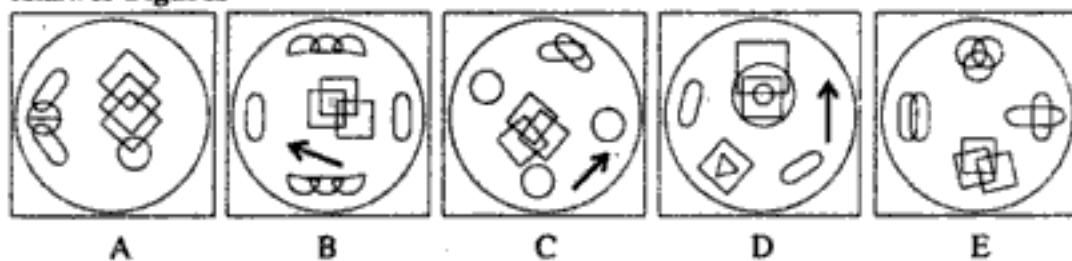
ANSWER: 5

10. Main Figure

ANSWER: 3

Practice Questions

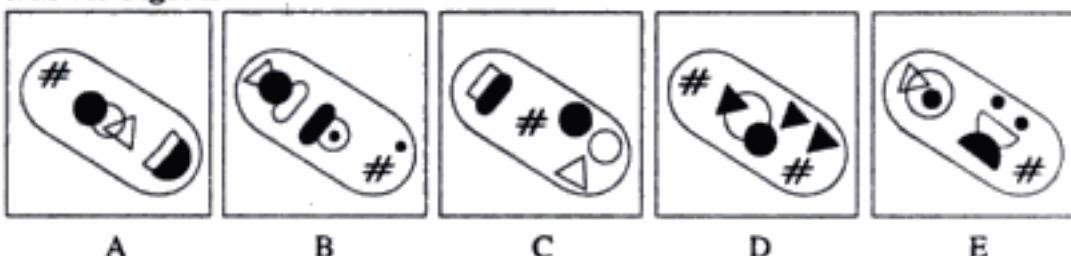
In the following questions, which of the alternative figures has the maximum number of items or products of the main figure?

1. Main Figure**Answer Figures**

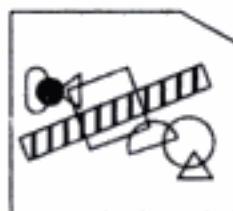
2. Main Figure



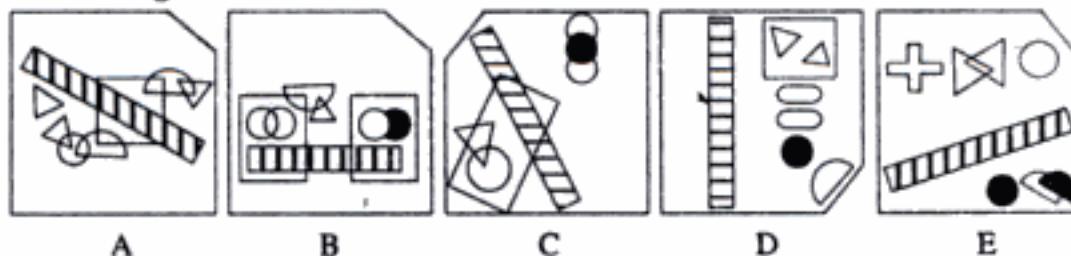
Answer Figures



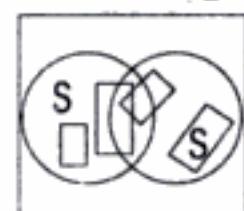
3. Main Figure



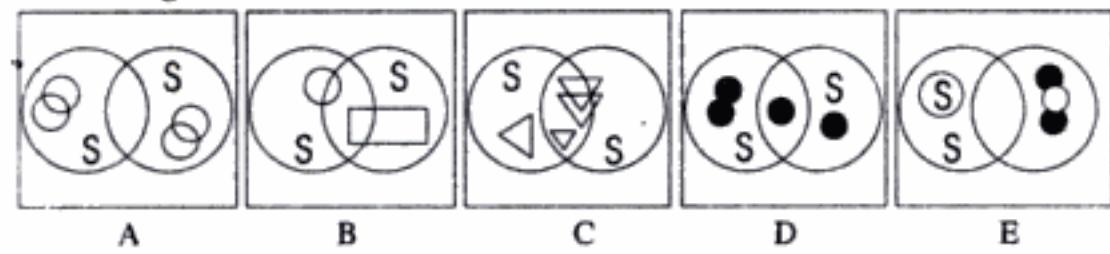
Answer Figures

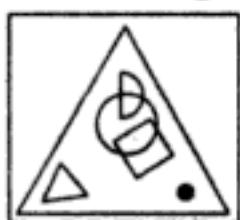
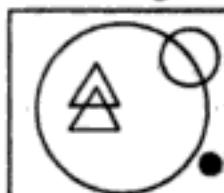


4. Main Figure

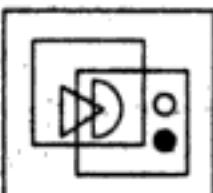


Answer Figures



5. Main Figure**Answer Figures**

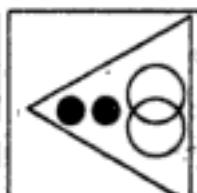
A



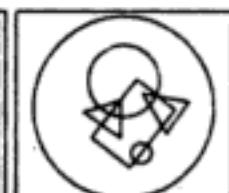
B



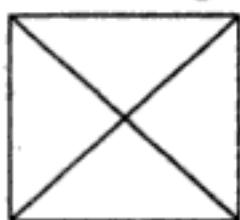
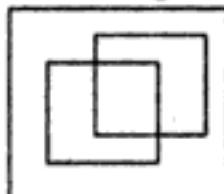
C



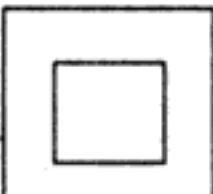
D



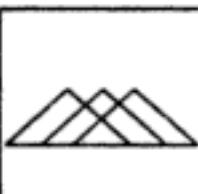
E

6. Main Figure**Answer Figures**

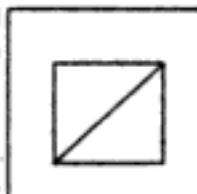
A



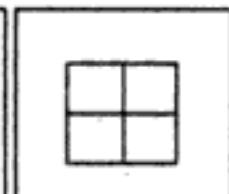
B



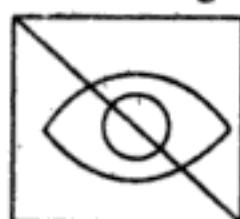
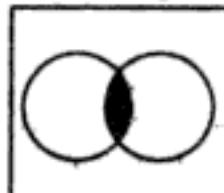
C



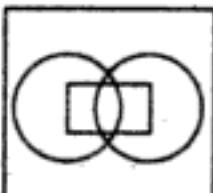
D



E

7. Main Figure**Answer Figures**

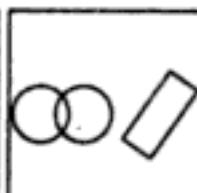
A



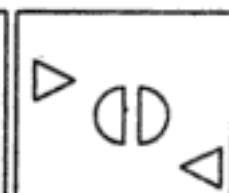
B



C



D



E

ANSWERS: 1. (C) 2. (B) 3. (D) 4. (B) 5. (A) 6. (C) 7. (C)

TYPE 12: GROUPING OF IDENTICAL FIGURES

In the following reasoning tests, a set of 8 or 10 different figures are given, each of which is numbered. Your task is to classify these figures into groups which comprise figures having more or less the same properties.

Illustrations

Directions: In the following sets of figures, there are six different figures. Group together the figures that are identical in some way or the other and form a group. Choose from the answer choices the number of figures which do not form any group of figures.

1.

A 1	2	3
B 4	5	6
C 7	8	9

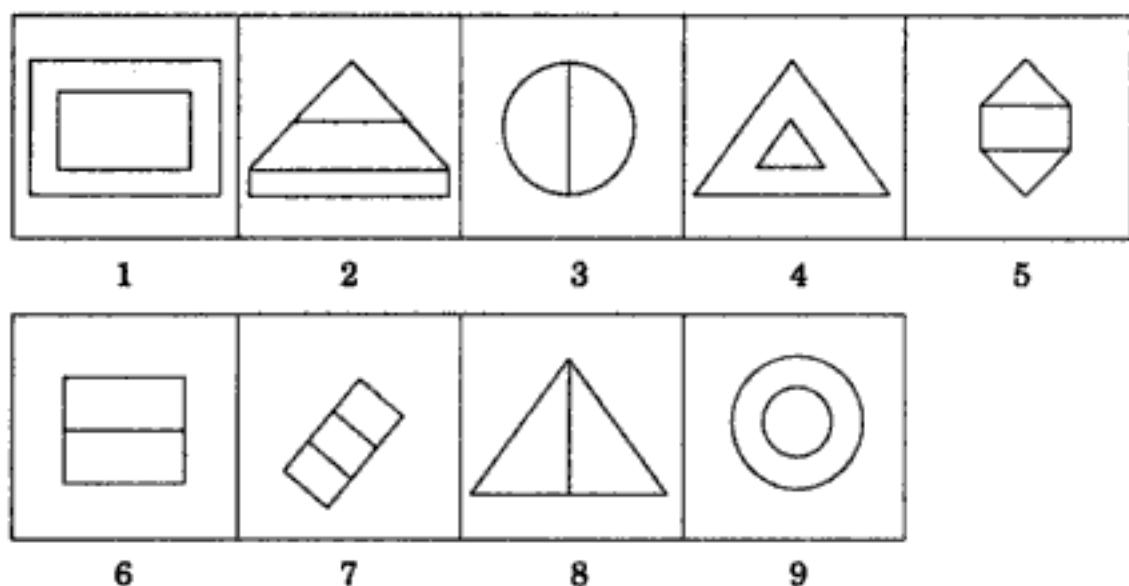
- (a) 1, 5 and 9
- (b) 2, 6 and 8
- (c) 4, 3 and 7
- (d) None of these

ANSWER: A

Explanation: Figures 2, 6 and 8 are all circles. Figures 4, 5 and 7 are all triangles. Other figures do not form any specific group because all the three figures are not identical.

Directions: Group the figures into three appropriate classes using each figure only once. Select the correct arrangement of figure numbers from the answer choices.

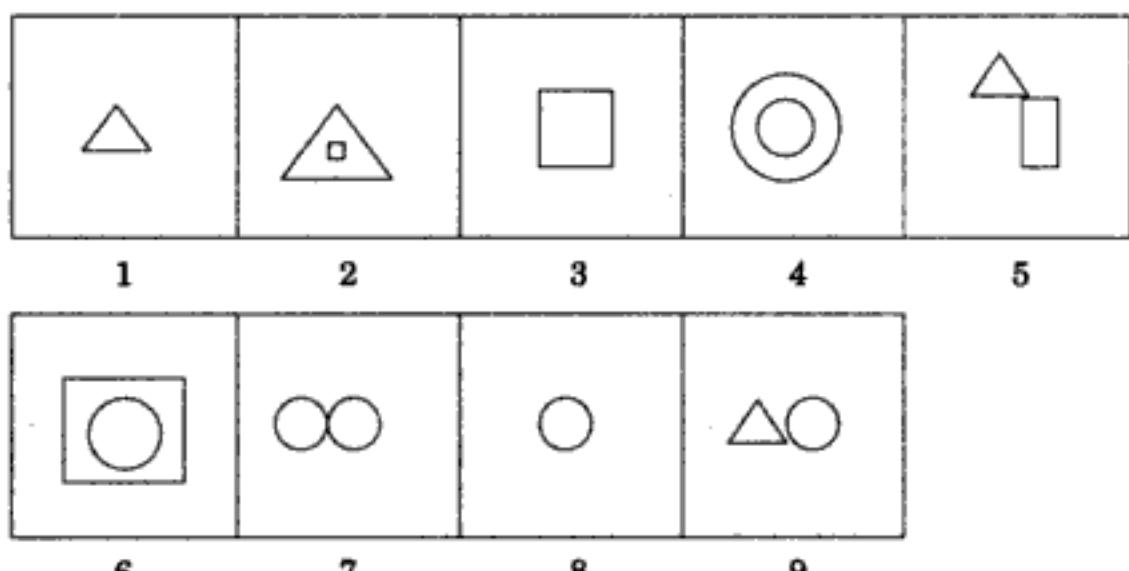
2.



- (a) 1,3,8; 2,4,6; 5,7,9
 (c) 3,4,7; 9,8,7; 4,3,1

- (b) 1,4,9; 3,6,8; 2,5,7
 (d) 2,3,6; 9,3,4; 6,3,2

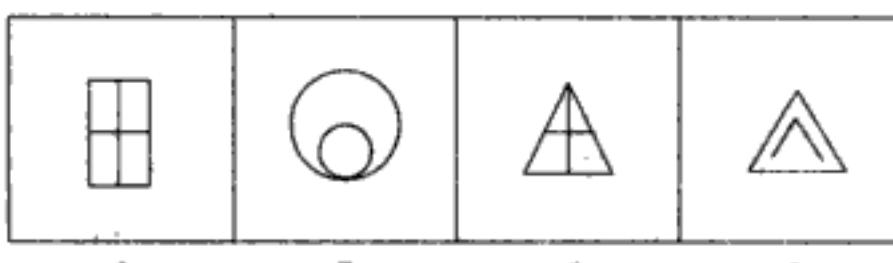
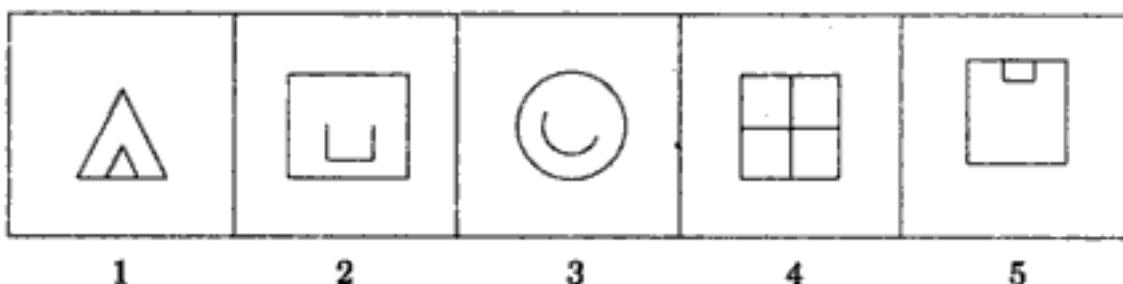
3.



- (a) 2,4,6; 9,7,3; 1,4,3
 (c) 1,3,8; 2,4,6; 5,7,9

- (b) 7,1,3; 4,3,2; 5,7,9
 (d) 4,2,5; 7,1,3; 5,8,9

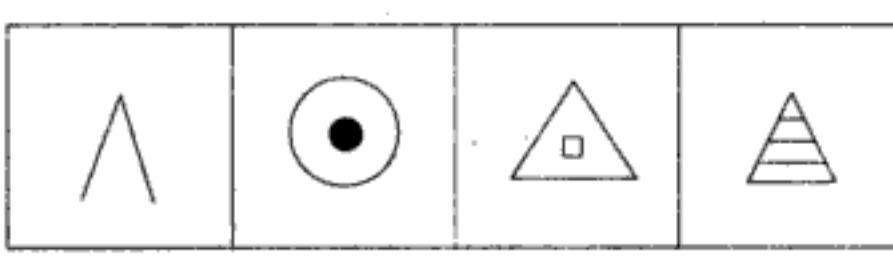
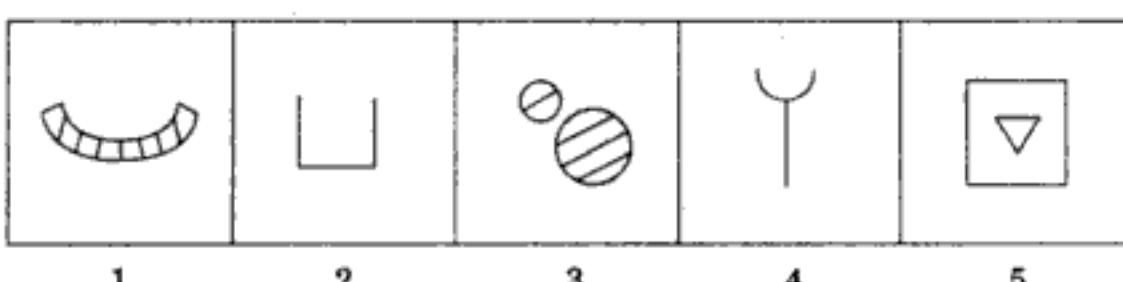
4.



- (a) 1,3,9; 2,4,6; 5,7,8
 (c) 2,4,5; 9,1,3; 7,8,6

- (b) 3,2,1; 4,6,5; 9,7,8
 (d) 1,5,7; 2,3,9; 4,6,8

5.



- (a) 1,3,9; 2,4,6; 7,8,7
 (c) 7,3,4; 9,4,2; 1,8,6

- (b) 1,3,9; 2,4,6; 5,7,8
 (d) 9,7,6; 1,3,4; 2,4,8

ANSWERS: 2.(b) 3.(c) 4.(d) 5.(b)

TYPE 13: APPLICATIONS OF GIVEN RULES TO A SET OF FIGURES

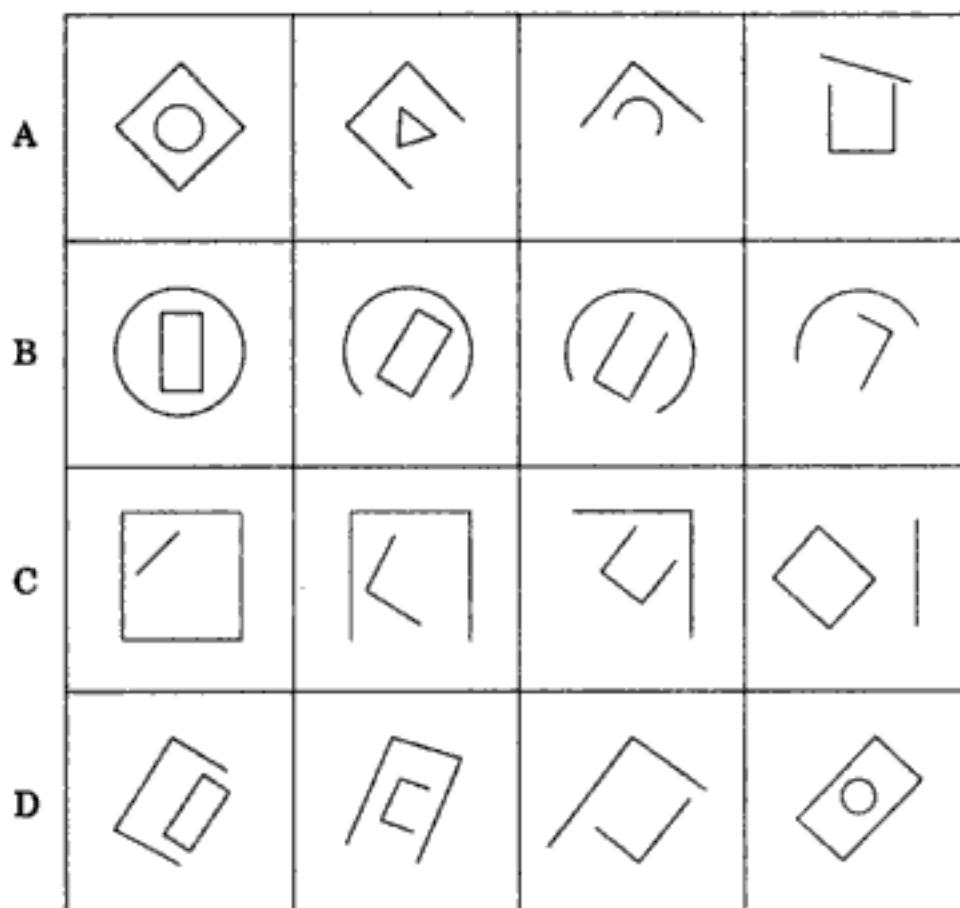
In this type of reasoning tests, four or five rows of different figures are given. In each question a specific rule is mentioned. You have to determine which row of figures follows the rule mentioned in the question.

Illustrations

Each of the following questions contains four rows of figures, marked A, B, C and D. Each row contains four or five different designs. You have to study carefully each row and judge which series of figures follows the stated rule exactly.

1. Rule

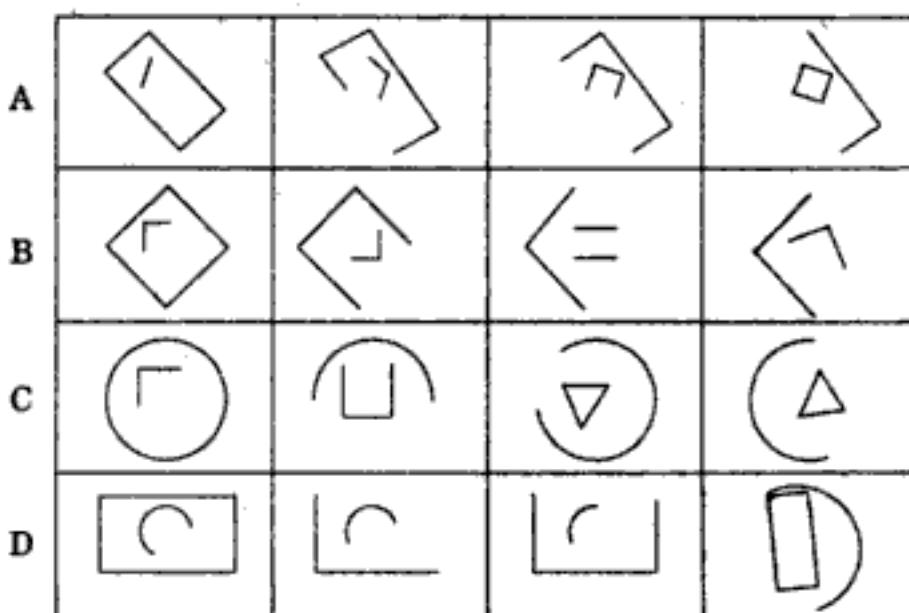
In one of the following set of figures, closed figures gradually become open, and open figures gradually become closed. Choose the row of figures that follows this rule.



ANSWER : C

2. Rule

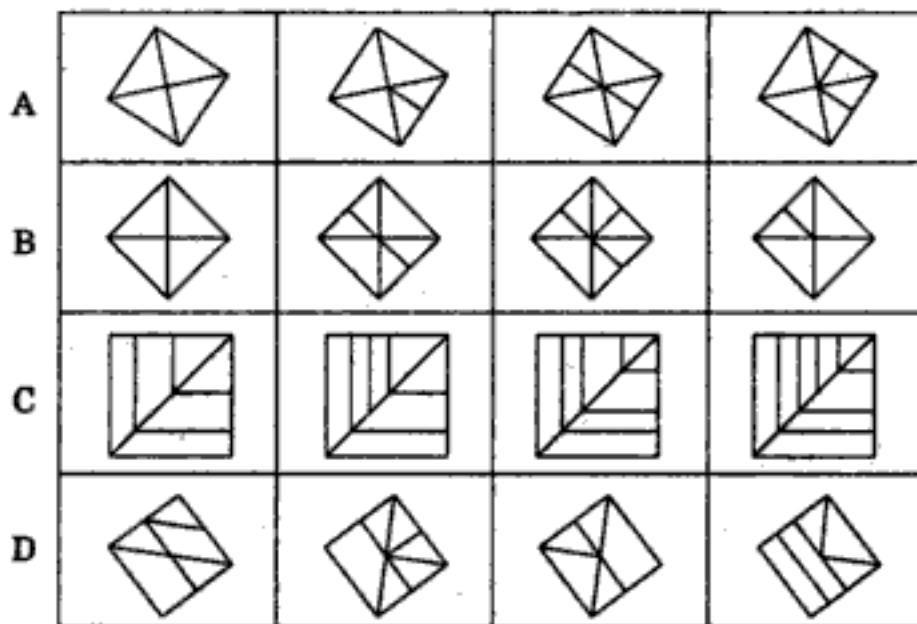
In one of the following sets of figures the number of sides decreases in closed figures and the number of sides increases in open figures. Identify the set.



ANSWER: A

3. Rule

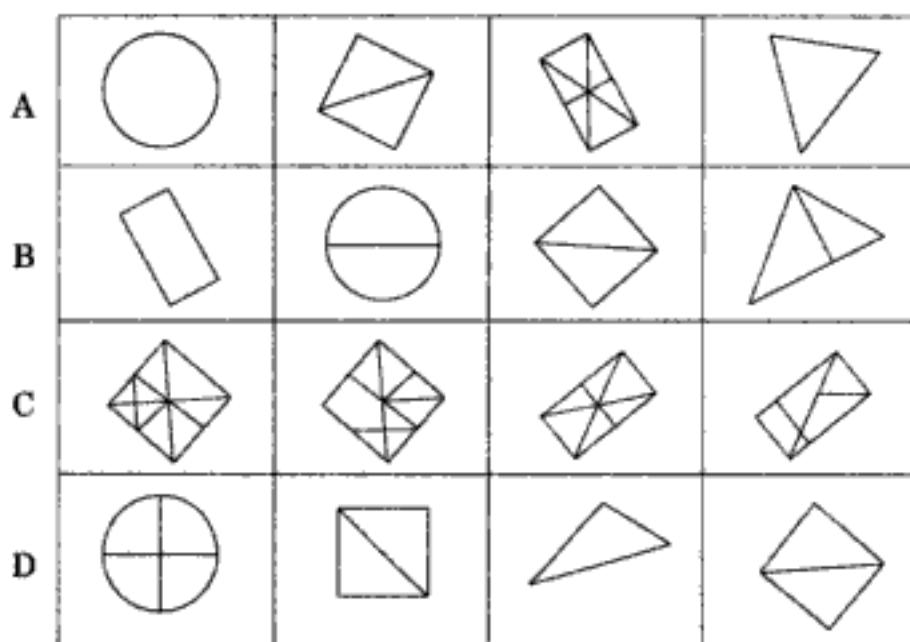
The simple figures become more complex along a row. Choose the row in which the figures become more complex as you move from one column to another.



ANSWER: C

4. Rule

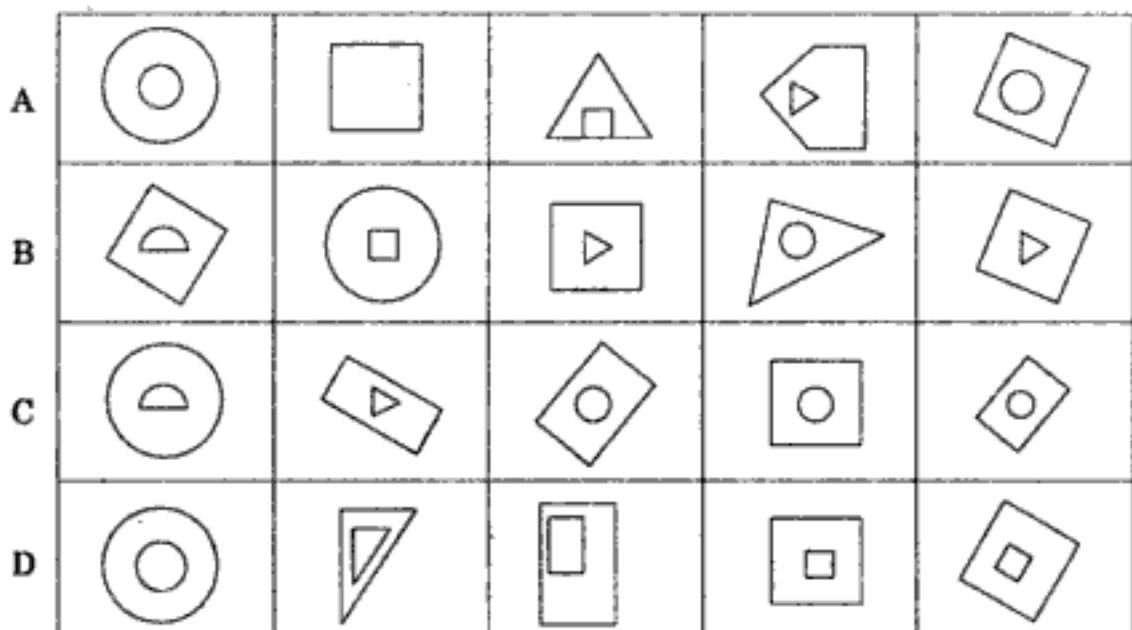
The complex figure gets simpler as one from left to right. Choose the row that follows this rule.



ANSWER: C

5. Rule

In each of the following rows, five figures are given. One of the four rows contains designs that follow a certain pattern which is not followed in figures of other rows. Choose the row containing these figures.



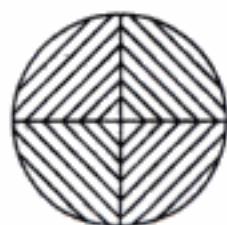
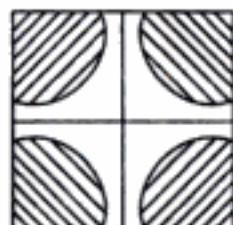
ANSWER: D

TYPE 14: PATTERN REARRANGEMENT

Here a key figure is given, certain parts of which are shaded or shown apart. Under each main figure four or five answer figures are given. You have to identify from the answer figures the one that is a rearrangement of the parts of the main figure.

Illustrations

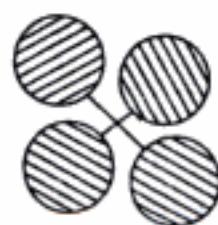
Which figure is a rearrangement of the shaded parts of the main figure?

1. Main Figure

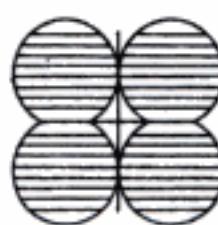
A



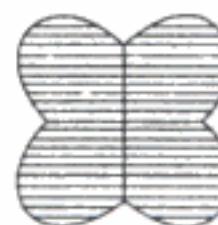
B



C



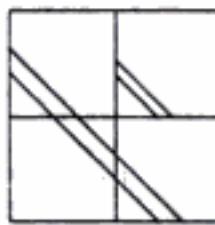
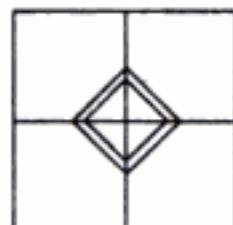
D



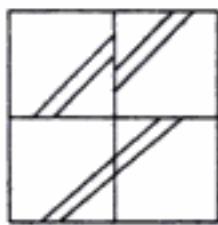
E

ANSWER: A The four shaded quarter semicircles are rearranged to form a circular figure.

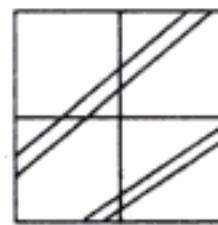
Directions: In the following questions select the answer figures that can be rearranged to form the main figure.

2. Main Figure

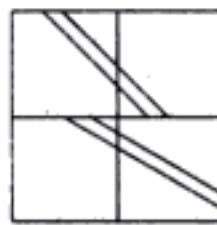
A



B

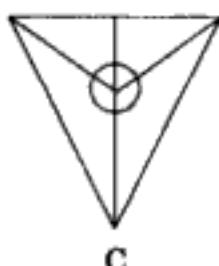
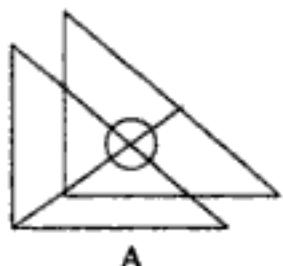
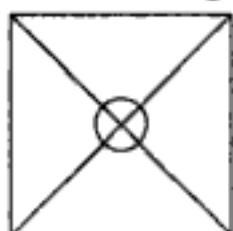
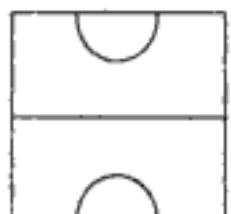
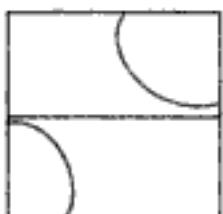
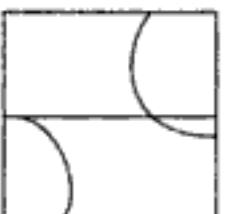
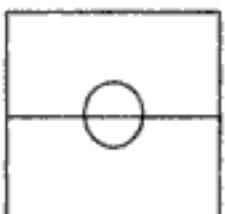
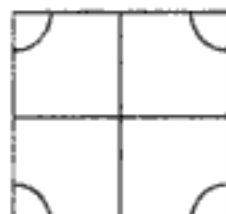
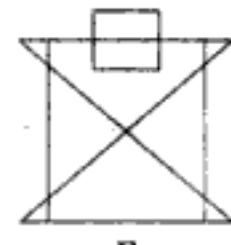
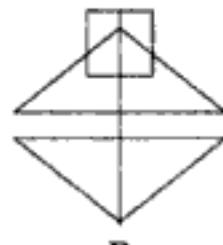
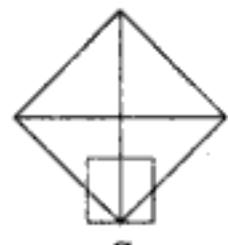
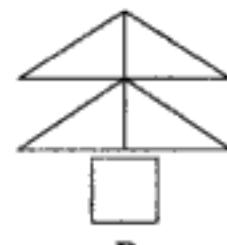
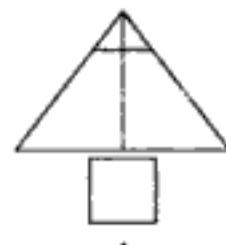
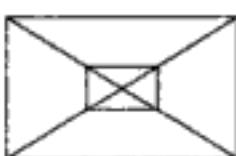


C



D

ANSWER: A

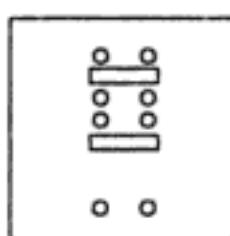
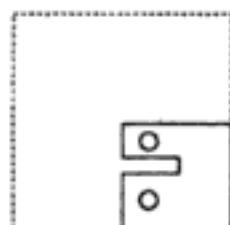
3. Main Figure**ANSWER: A****4. Main Figure****ANSWER: A****5. Main Figure****ANSWER: E**

TYPE 15: PAPER CUTTING

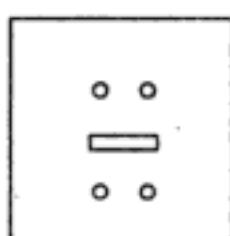
In these questions, a sheet of paper is folded in certain given directions and cuts are made on it. You have to determine how this sheet of paper will look when it is opened up.

Illustrations

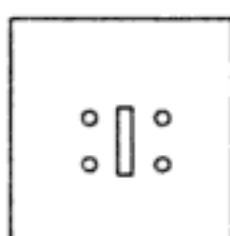
If a square sheet of paper is folded two times from the centre and cuts are made as shown in the problem figure (or main figure) how will it appear when it is opened? Select the appropriate figure from the answer choices marked 1, 2, 3 and 4.

1. Problem Figure

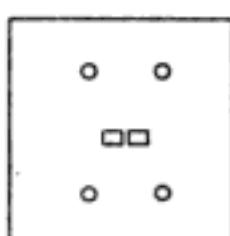
A



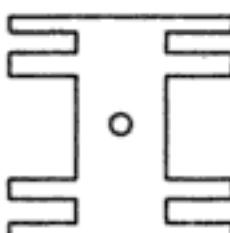
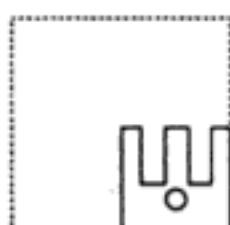
B



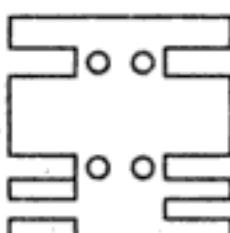
C



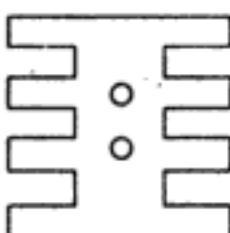
D

2. Problem Figure

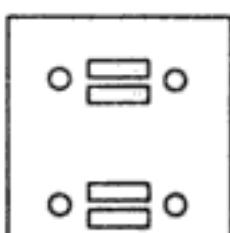
A



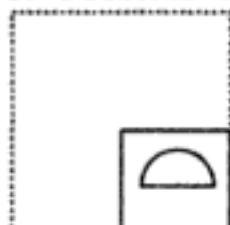
B

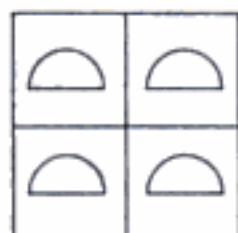


C

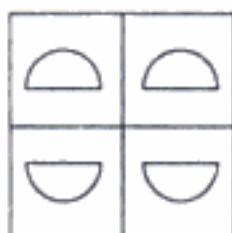


D

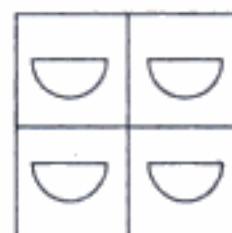
3. Problem Figure



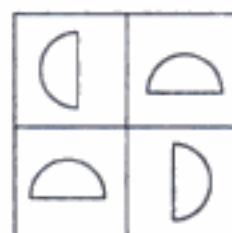
A



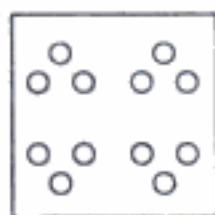
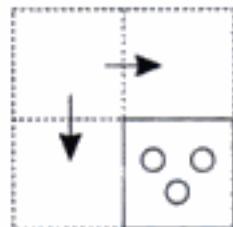
B



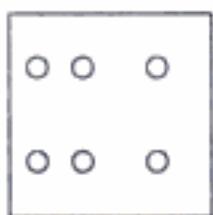
C



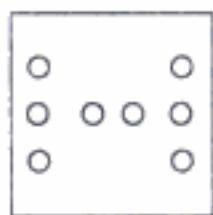
D

4. Problem Figure

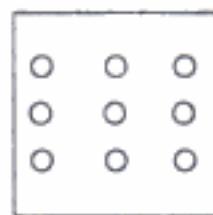
A



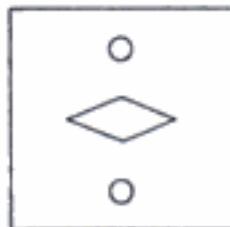
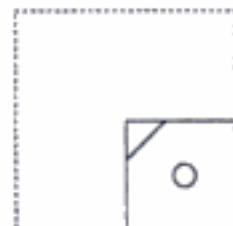
B



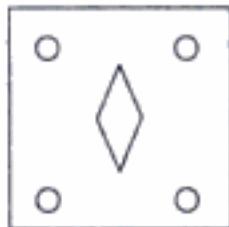
C



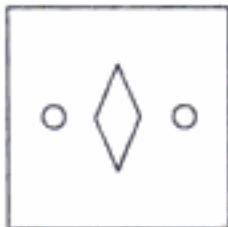
D

5. Problem Figure

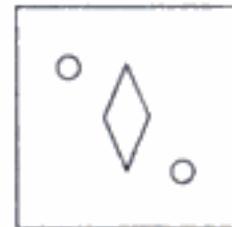
A



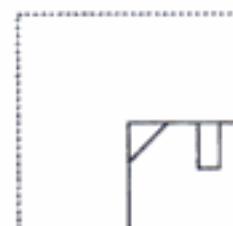
B

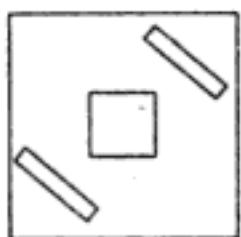


C

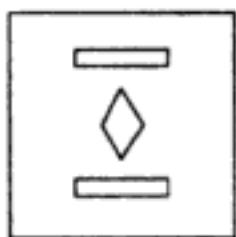


D

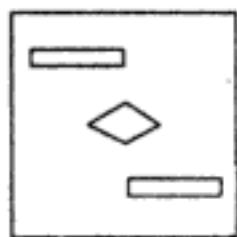
6. Problem Figure



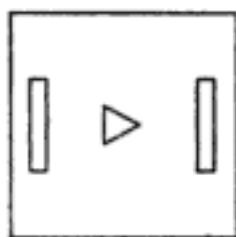
A



B

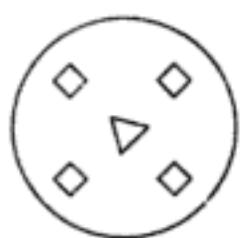
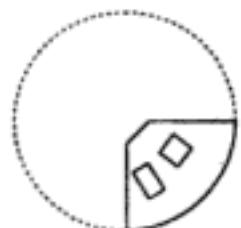


C

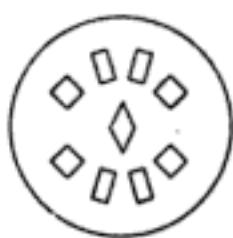


D

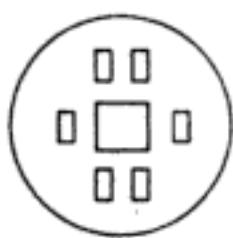
7. problem Figure



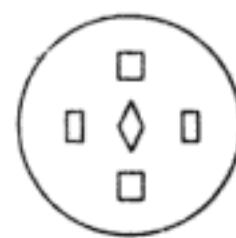
A



B

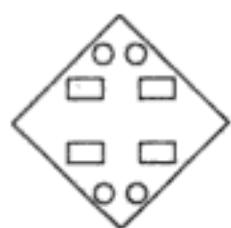
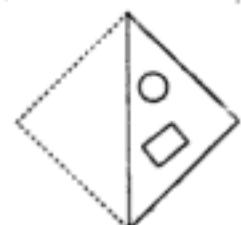


C

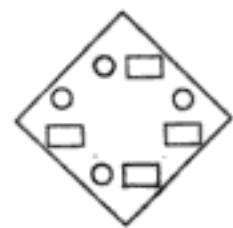


D

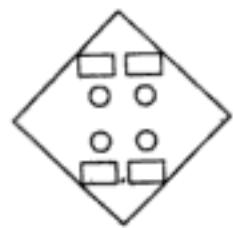
8. Problem Figure



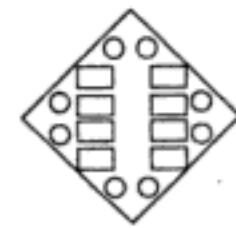
A



B

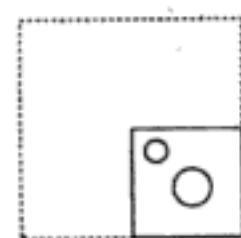


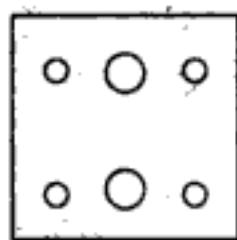
C



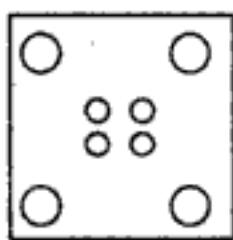
D

9. Problem Figure

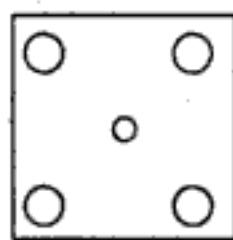




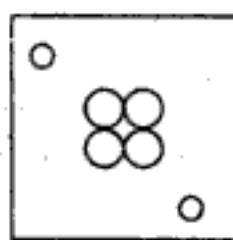
A



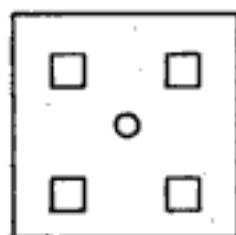
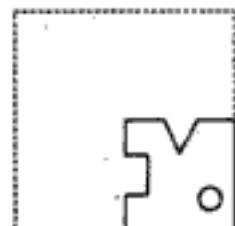
B



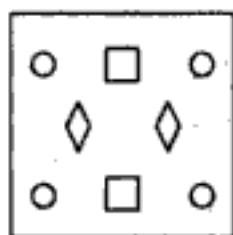
C



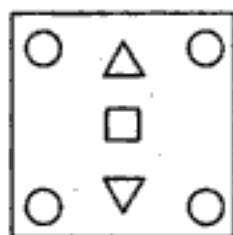
D

10. Problem Figure

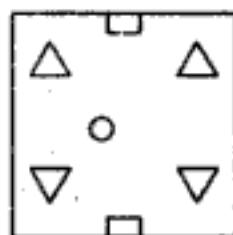
A



B



C



D

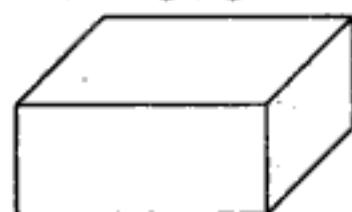
ANSWERS: 1.(A) 2.(D) 3.(B) 4.(A) 5.(B) 6.(B) 7.(B) 8.(A) 9.(B) 10.(B)

TYPE 16: MAKING BLOCKS BY PAPER FOLDING

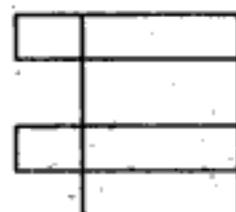
This test is designed to judge your understanding of forming a given block by folding a sheet of cardboard/paper, to create a given design.

Illustrations

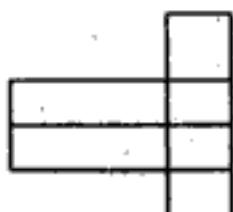
1. Directions: Look at the following box made by folding a piece of cardboard. It is formed by folding one of the four figures, marked A, B, C and D. You have to determine which of the choices can be used to create the box (or the main design) given in the question figure.



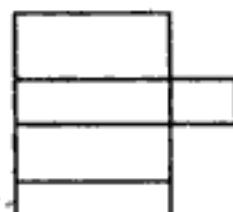
Box



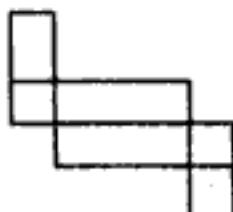
A



B



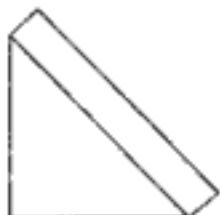
C



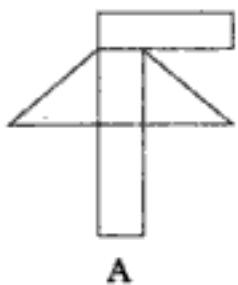
D

ANSWER: D

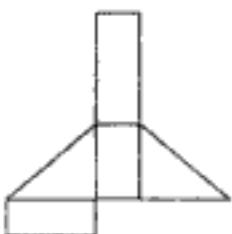
2. Directions: Look at the following shape. It has been made by folding one of the four answer figures, marked A, B, C and D. Select the appropriate answer figure.



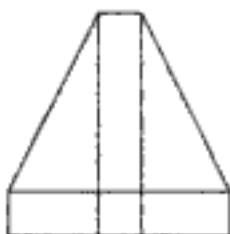
Key diagram



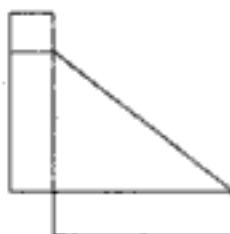
A



B



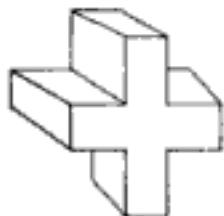
C



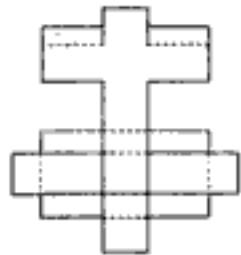
D

ANSWER: B

3. Directions: Observe the following shape carefully. It has been made by folding one of the answer figures, A, B, C and D, given below. Select the correct answer figure.



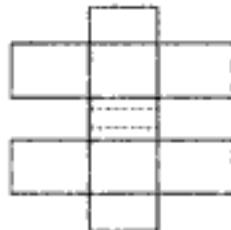
Key shape



A



B



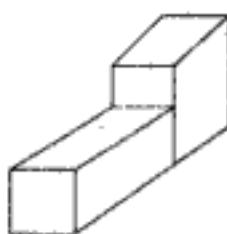
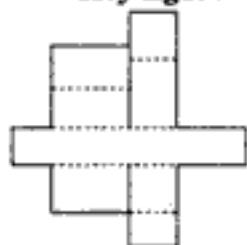
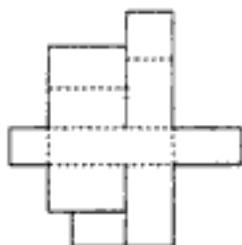
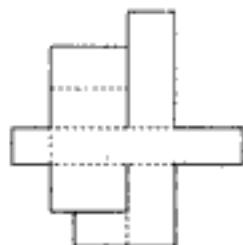
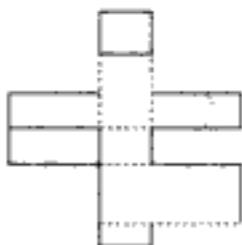
C



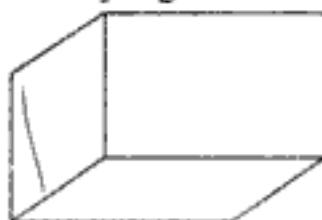
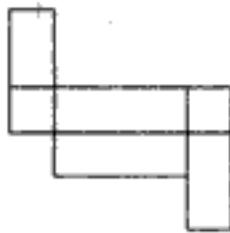
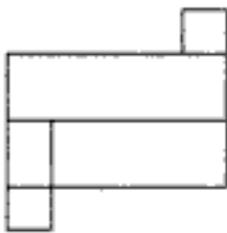
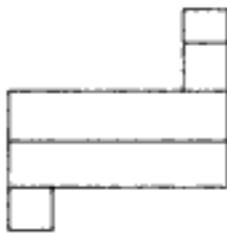
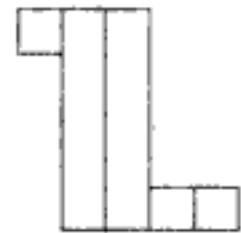
D

ANSWER: B

4. Directions: Carefully observe the following design. It has been made by folding one of the four answer figures A, B, C and D, given under the key figure. Choose the correct figure.

**Key figure****A****B****C****D****ANSWER: C**

5. Directions: Carefully examine the following shape which has been formed by folding a piece of paper. Under the key figure, four choices marked A, B, C and D are given. Select the one which can be folded to produce the shape given in the key figure.

**Key figure****A****B****C****D****ANSWER: A**

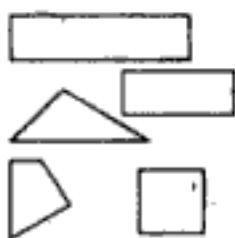
TYPE 17: COMPLETING A GIVEN BLOCK FROM BROKEN PIECES

In this type of reasoning, a blank block or design is given in the question. Each of the answer choices has different pieces. You have to select the set of pieces that can form the block or design given in the question.

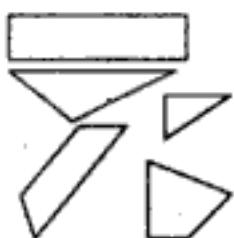
Illustrations

Directions: In the following questions a key block is given. Under it four answer figures, marked A, B, C and D are given. Each answer figure contains pieces of different shapes. Identify the answer figure that can form the key block.

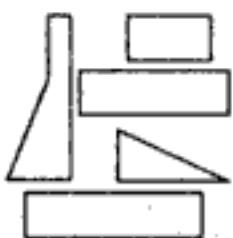
1. Key block



A



B



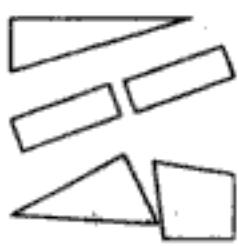
C



D

ANSWER: B

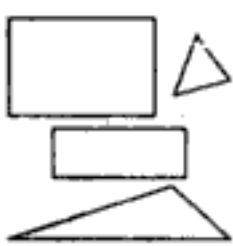
2. Key block



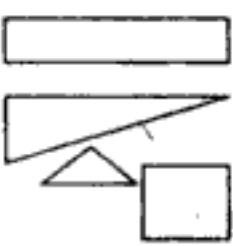
A



B



C

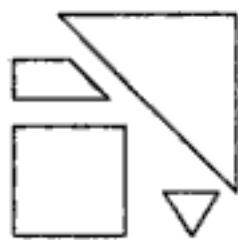


D

ANSWER: A

3. Key block

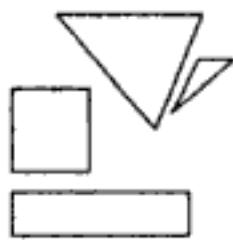




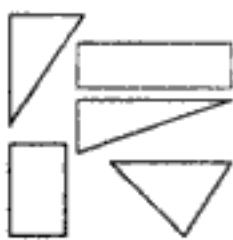
A



B



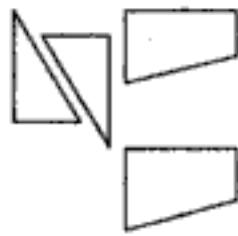
C



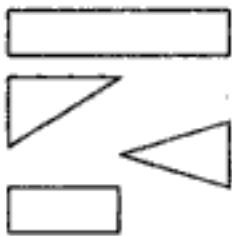
D

ANSWER: B

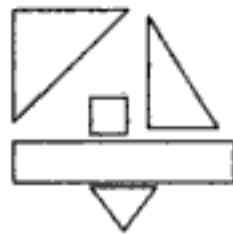
4. Key block



A



B



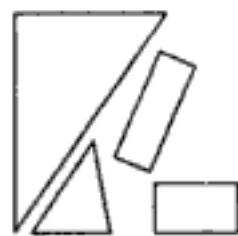
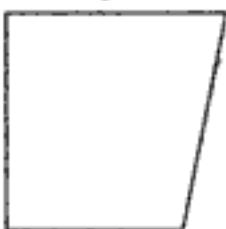
C



D

ANSWER: A

5. Key block



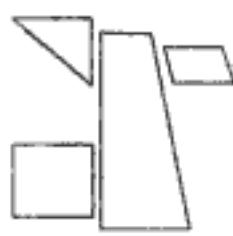
A



B



C



D

ANSWER: B

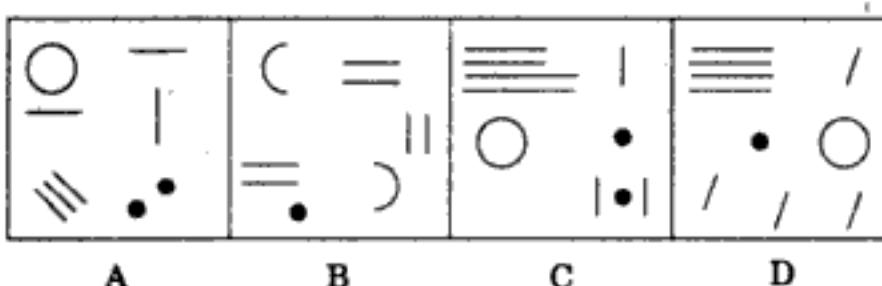
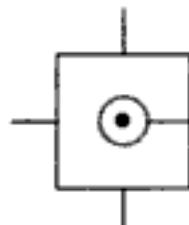
TYPE 18: MAKING UP KEY FIGURES FROM GIVEN COMPONENTS

In these reasoning tests, you are given a key figure. Under the key figure, four or five answer figures are given. You have to determine which of the choices contain all the elements needed to make the key figure.

Illustrations

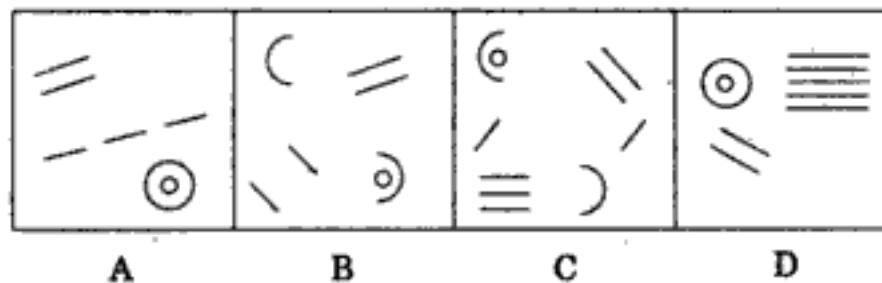
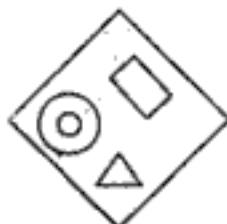
In the following questions, which of the alternatives A, B, C and D will exactly make up the key figure given in the question.

1.



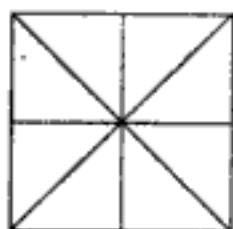
ANSWER: D

2.



ANSWER: C

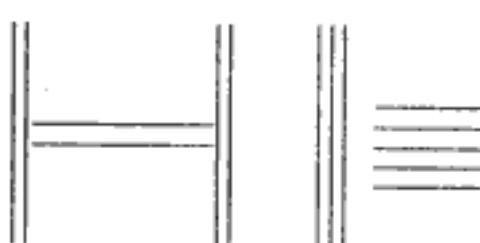
3.



A



B

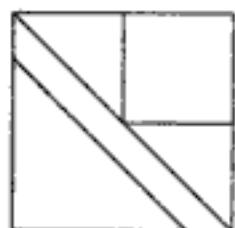


C

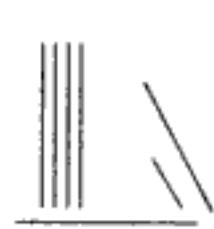
D

ANSWER: D

4.



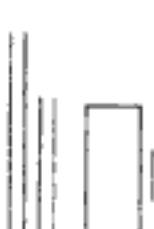
A



B



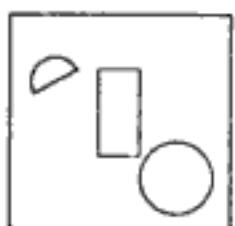
C



D

ANSWER: A

5.



A



B



C



D

ANSWER: C

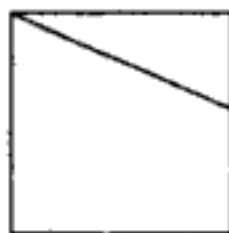
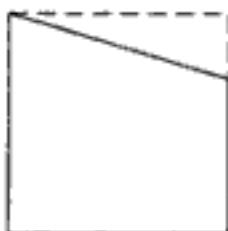
TYPE 19: FOLDED VIEWS OF PAPER

In these tests of reasoning, a main figure is given, showing the folded view of a piece of paper. The answer choices show the same paper unfolded, along with the lines left by the folds. Your task is to choose the figure from the answer choices, which represents the original main figure, when unfolded.

Illustrations

Direction: Choose from the answer choices the figure which represents the correct view of the folded paper as it will look on unfolding.

1.



A

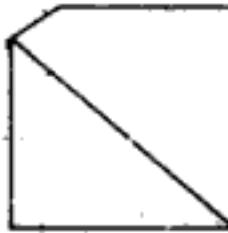
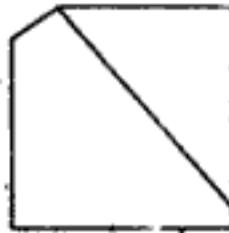
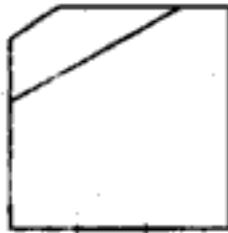
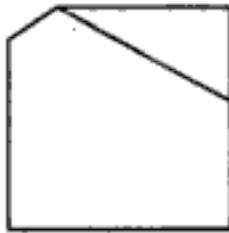
B

C

D

ANSWER: C

2.



A

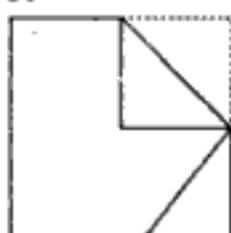
B

C

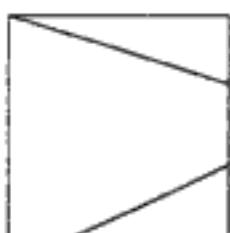
D

ANSWER: A

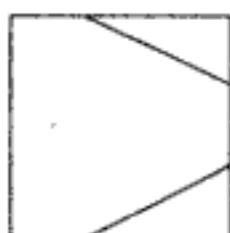
3.



A



B



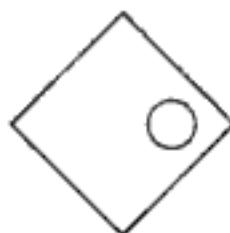
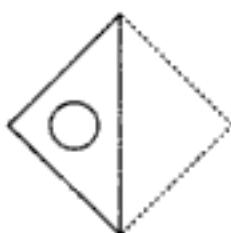
C



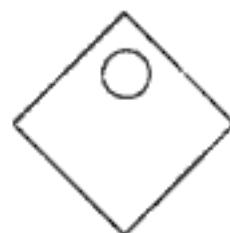
D

ANSWER: D

4.



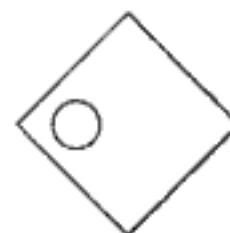
A



B



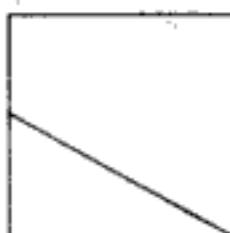
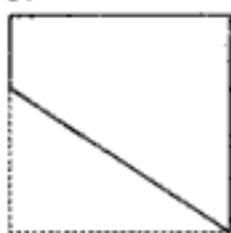
C



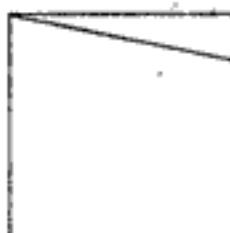
D

ANSWER: D

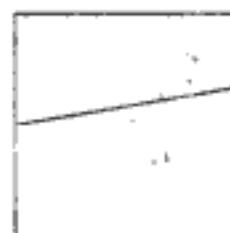
5.



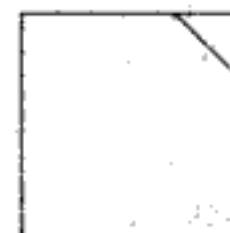
A



B



C



D

ANSWER: A

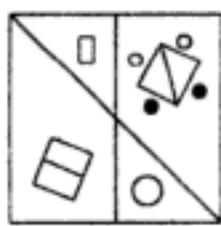
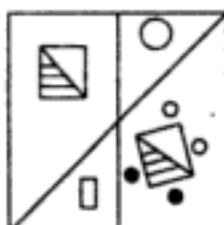
TYPE 20: DECIPHERING OPPOSITE VIEW OF A DESIGN

In these type of reasoning tests, you are given a design drawn on a tracing paper (thin sheet). Your task is to determine what the design will look like when seen from the reverse side of the tracing paper.

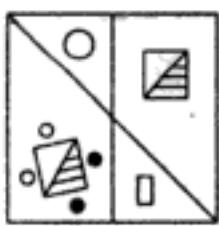
Illustrations

Directions: In the following questions, a design is given, marked key figure. Under the key figure various views are given. You have to determine which choice will be the exact view of the original key figure seen from the reverse side of the paper.

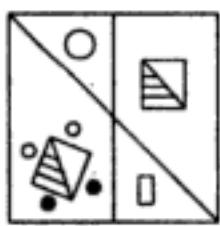
1. Key Figure



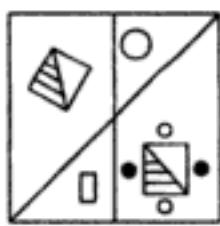
A



B



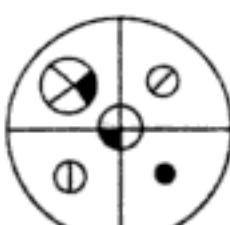
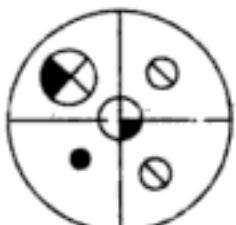
C



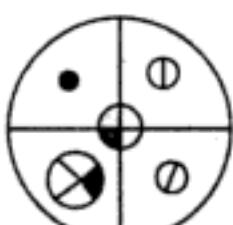
D

ANSWER: B

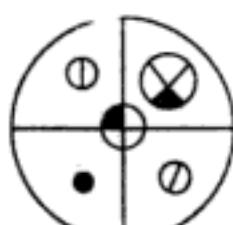
2. Key Figure



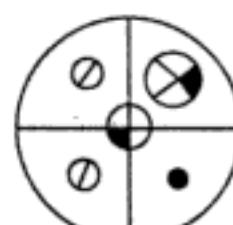
A



B

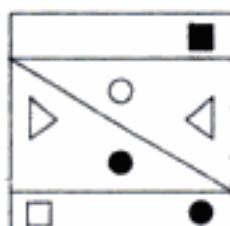
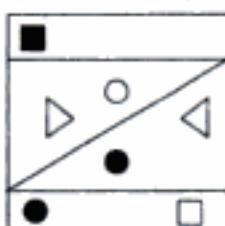


C

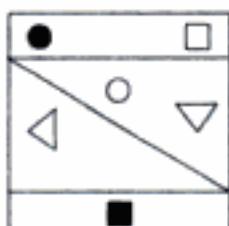


D

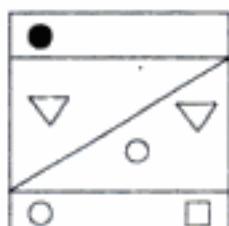
ANSWER: D

3. Key Figure

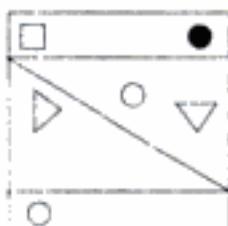
A



B

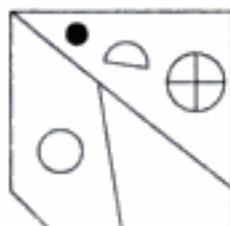
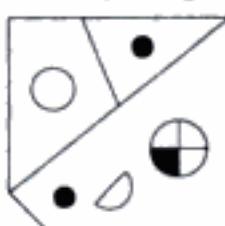


C

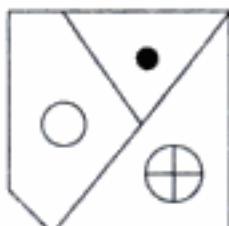


D

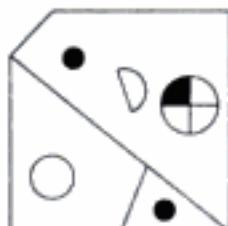
ANSWER: A

4. Key Figure

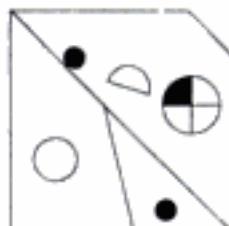
A



B

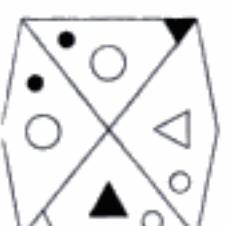
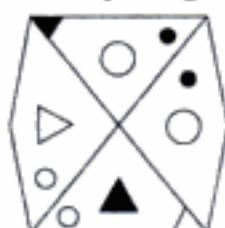


C

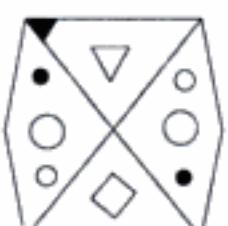


D

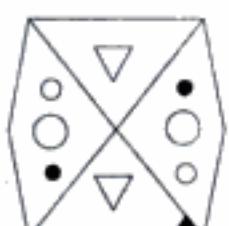
ANSWER: C

5. Key Figure

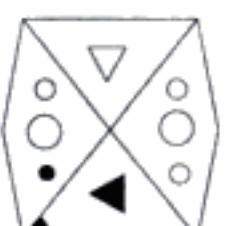
A



B



C



D

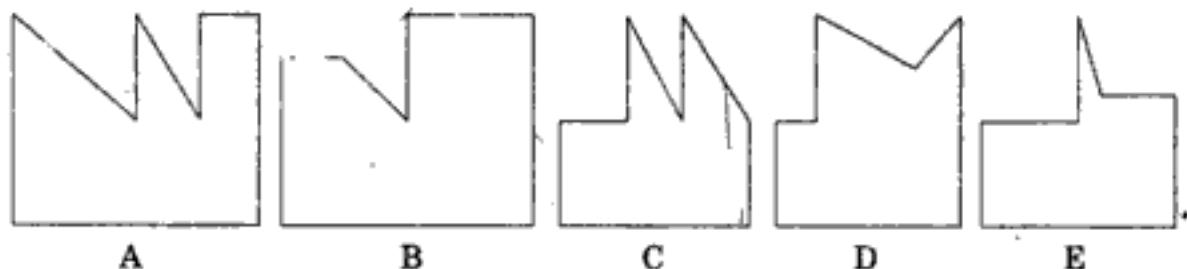
ANSWER: A

TYPE 21: MAKING A PERFECT SQUARE OR A GIVEN DESIGN FROM CUT-UP PIECES

In such reasoning questions, you are given pieces of cardboard cut out in various shapes. You have to identify the pieces that can be used to make a perfect square or the odd figure in the group, as required in the question.

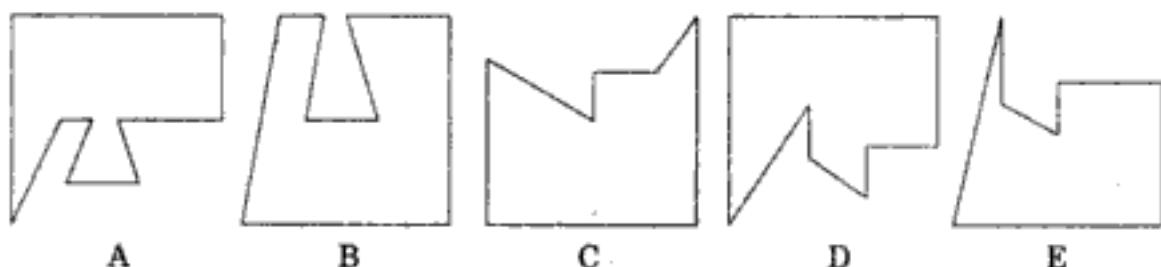
Illustrations

- Find the odd figure out.



ANSWER: D Figures A and C form a perfect square, as well as figures B and E. Figure D does not fit in with any of the figures to make a perfect square

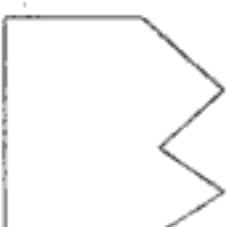
- From the answer figures A, B, C, D and E a perfect square could be made by joining two of them. One of them does not fit in with any other figure to make a perfect square. Choose that figure as your answer.

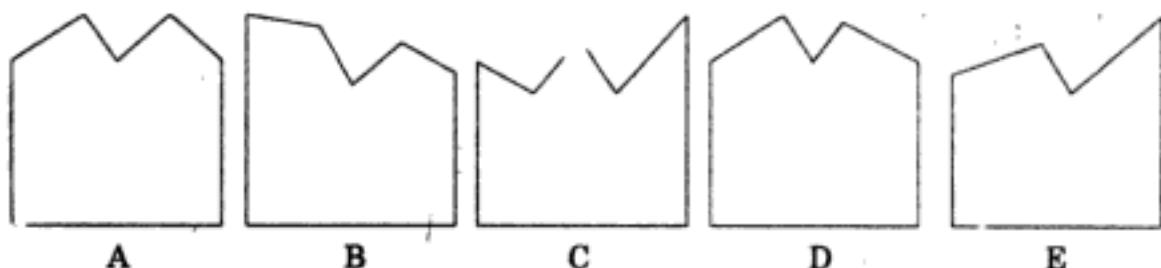


ANSWER: C Figures A and B will join to form a perfect square, as well as figures D and E. Figure C does not fit with any other figure to form a square.

- Look at the key figure. Under it five other figures shapes marked A, B, C, D and E are given. You have to find out which of these figures can be used to form a rectangle when joined to the key figure.

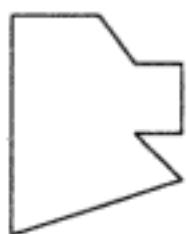
Key Figure





ANSWER: C

4. Which of the figures will form a perfect square when joined with the key figure?

Key Figure

A



B



C



D

ANSWER: B

5. Directions: In the following set of blocks, marked A, B, C, D and E there are two cut-designs in each block. When the cut-designs are joined together, they form a perfect square. While in four blocks, relevant cut-designs form perfect squares, in one block they do not form a perfect square. Identify the block containing cut-designs that do not form a perfect square.



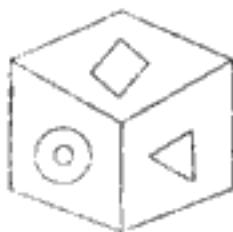
ANSWER: B

TYPE 22: QUESTIONS DEALING WITH CUBES AND DICES

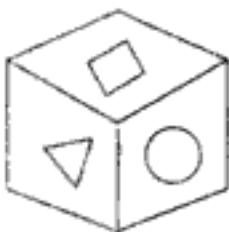
A cube or dice is a small cubical solid piece with six faces, which are either serially numbered 1 to 6 or otherwise distinguished using various symbols. Several types of questions on cubes/dices appear in competitive examinations. Some examples are given below.

Illustration I

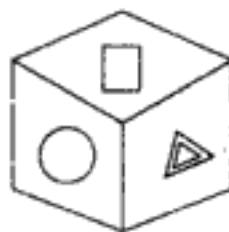
1. Directions: Given below are four views of a cube. Each face is marked with certain symbols. The different views of the cubes are numbered 1 to 4. Carefully examine each view and answer the questions that follow.



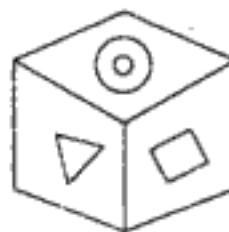
1



2



3



4

1. In figure 1, which symbol will appear opposite to the square ?
 (a) (b) (c) (d)

2. In figure 2, which symbol will appear on the face opposite to the face containing a circle ?
 (a) (b) (c) (d)

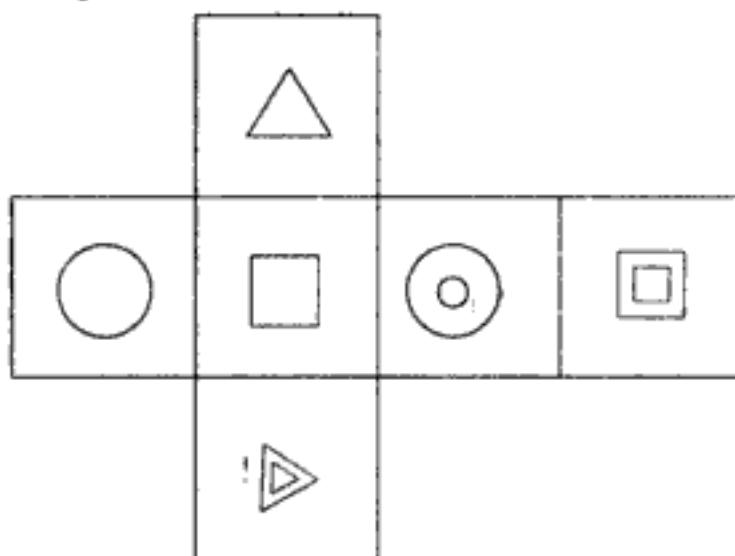
3. In figure 3, which symbol will appear on the face opposite to the face containing a double square ?
 (a) (b) (c) (d)

4. In figure 4, which symbol will appear on the face opposite to the face containing a triangle ?
 (a) (b) (c) (d)

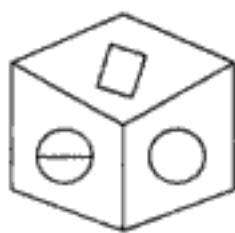
ANSWERS:

- 1.(c) 2.(b) 3.(d) 4.(b)

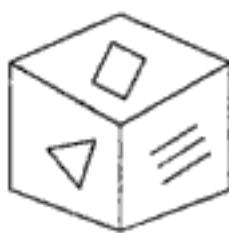
The open view of the cube shown below explains the various views of the above questions.



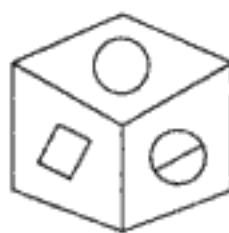
2. Directions: Four views of a cube are given below. Study each view and answer the questions given below them. -



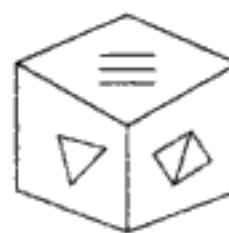
1



2



3



4

1. In figure 1, which symbol is below the square ?

- (a)
- (b)
- (c)
- (d)

2. In figure 2, which symbol is opposite the triangle ?

- (a)
- (b)
- (c)
- (d)

3. In figure 3, which symbol will be opposite to the circle ?

- (a)
- (b)
- (c)
- (d)

4. In figure 4, which symbol will appear opposite to the crossed circle ?

- (a)
- (b)
- (c)
- (d)

ANSWERS:

1. (b)
- 2.(d)
- 3.(a)
- 4.(c)

The unfolded view of the cube is given below, to explain the answers.

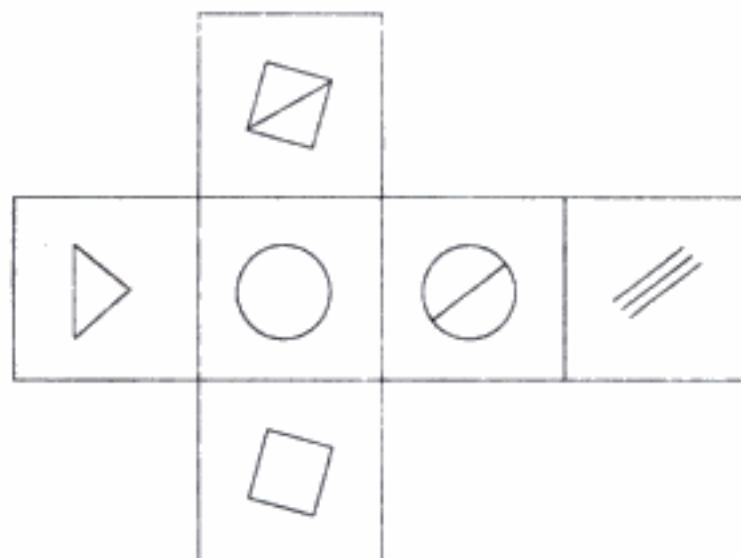
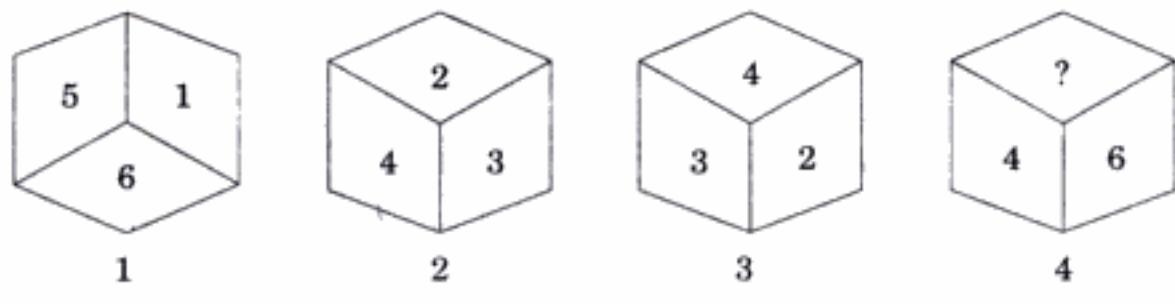


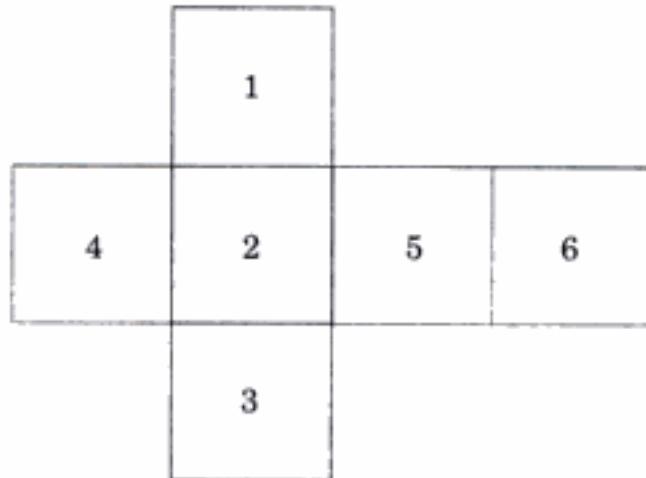
Illustration II

In some reasoning questions on cubes and dices, various views of a cube/dice are given. On each face a number is given. In one cube, one face is left blank. You have to decide which number should appear in the blank face.

1. Directions: The following diagram depicts various views of a cube. Each face has some number, whereas in cube 4, one face is blank. From the answer choices, select the number that should come in the blank space.



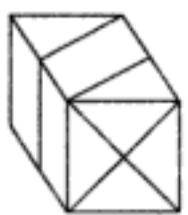
- (a) 2 (b) 5 (c) 3 (d) 1



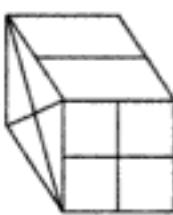
ANSWER: C

By correlating the figures on various faces, the number on the blank face can be determined. The unfolded view of the cube will also help in explaining the answer.

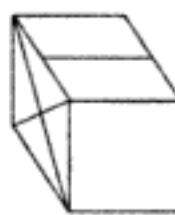
2. Directions: Given below is a cubical block with designs on its faces viewed from different directions. From the answer choices given below, find the design on the blank face of the cube numbered 3.



1



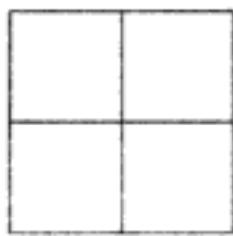
2



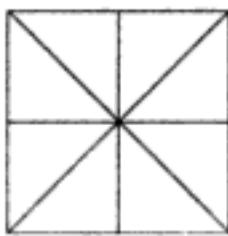
3



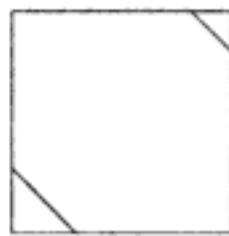
4



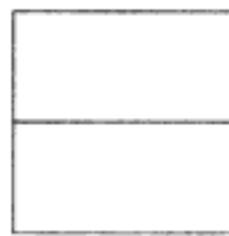
A



B



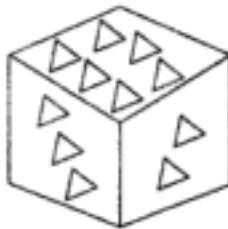
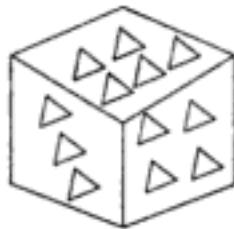
C



D

ANSWER: A

3. Directions: Two positions of a cubical block are given below, each face having a number of small triangles. In another position of the cube, if there is one triangle at the bottom, how many triangles will be there on the top face?



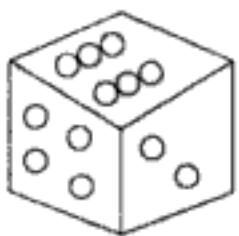
- (A) 4 (B) 3 (C) 2 (D) 5

ANSWER: B

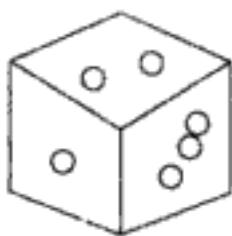
Illustration III

In the questions given so far, the cubes usually have numbers 1 to 6 or some distinguishing symbols on each face. These cubes are known as regular cubes. In some cases, questions are based on 'curious' types of cubes. An example is given below.

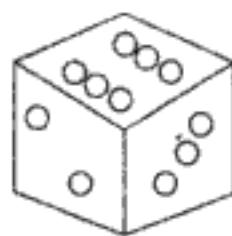
Directions: The illustration below shows three views of the same (but rather 'curious') cube. Find out how many spots there are on the face directly opposite to the face of the third cube having six spots.



1



2

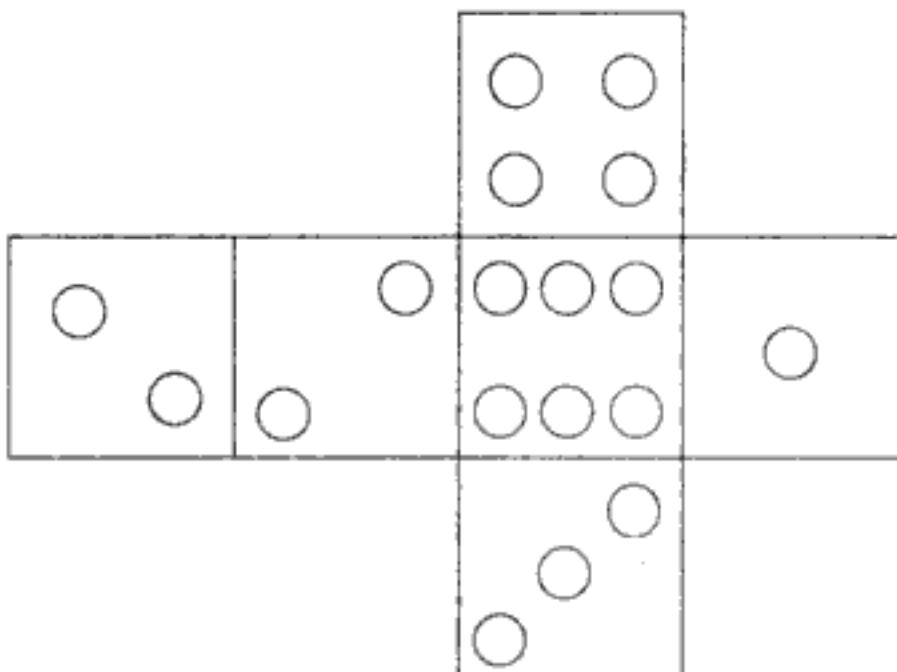


3

- (A) Three (B) Two (C) One (D) Four

ANSWER: B

The face directly opposite to the face with six spots has two spots. The cube is not a regular cube but a curious one.



The answer is explained by unfolding the cube as shown above.

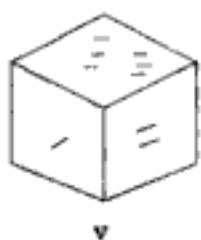
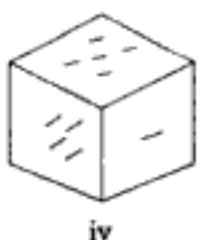
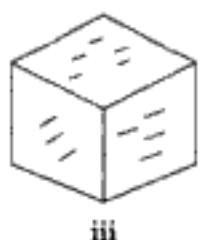
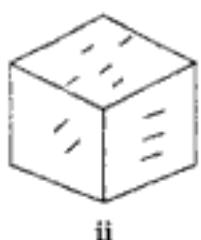
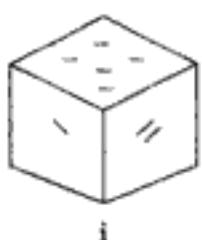
Illustration IV

Another set of questions deals with cubes displaying various views. You have to answer questions based on the types of cubes involved in the set.

Directions: The cubes shown here have different symbols/markings on their faces. Each question has five views of cubes. You have to determine how many different cubes are involved in each case. Answers have to be marked as follows:

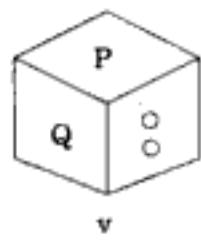
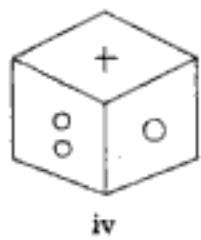
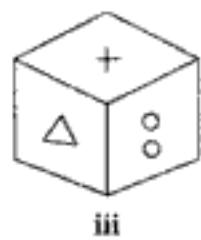
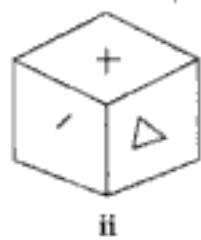
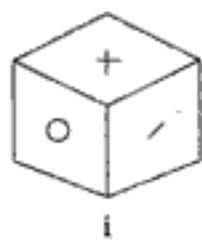
- (A) In case only one cube is involved
- (B) In case two cubes are involved
- (C) In case three cubes are involved
- (D) In case four cubes are involved
- (E) In case five or more cubes are involved

1.



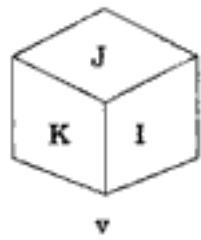
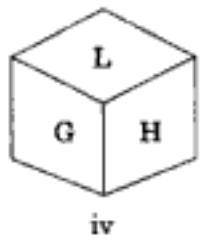
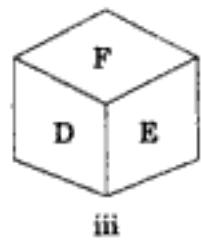
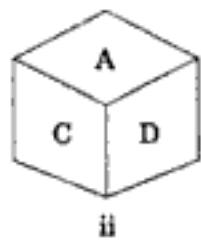
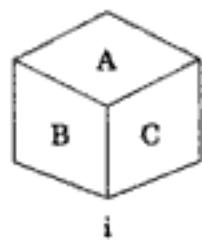
ANSWER: A

2.



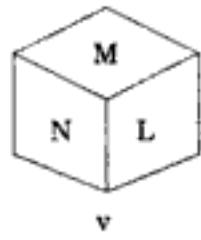
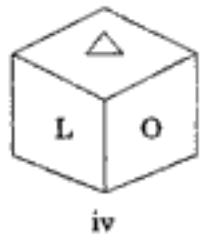
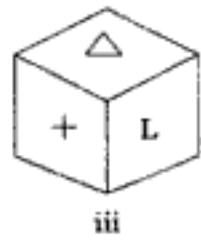
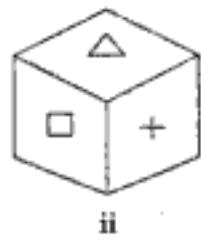
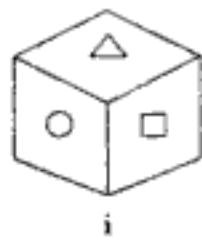
ANSWER: B

3.



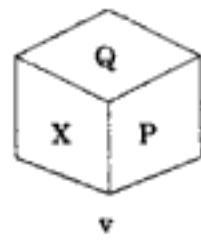
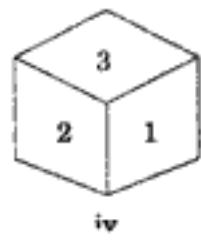
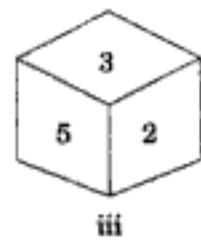
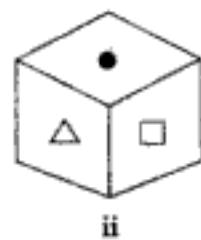
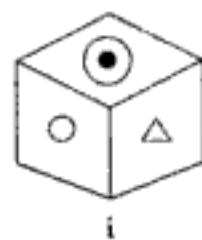
ANSWER: B

4.



ANSWER: B

5.



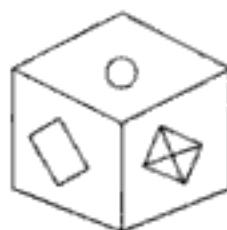
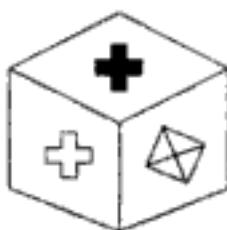
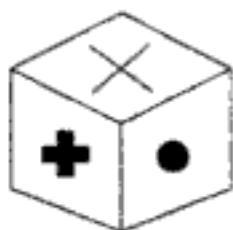
ANSWER: C

Illustration V

In some other questions on cubes you are given different views of one or more cubes and you have to determine whether they are views of the same cube or of different cubes.

Directions: In the following figures, there are different designs on each face of the three six-sided cubes. Carefully study the views, and mark your answer as follows:

- (A) If these are views of three different cubes
- (B) There are two similar cubes, and one is different
- (C) These are views of the same cube, that is, there is only one cube
- (D) The figures are not sufficient to determine the number of cubes

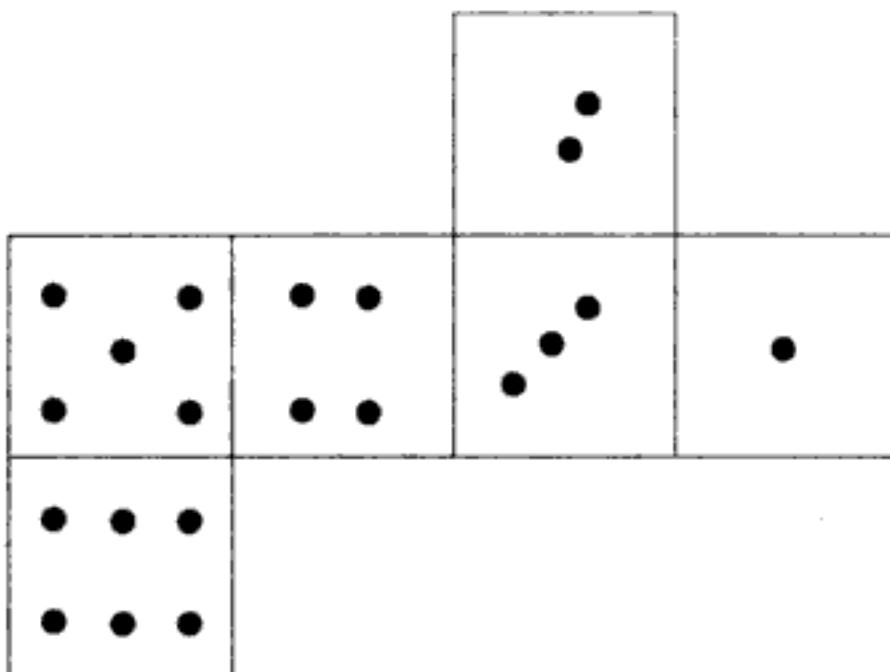


ANSWER: B

Illustration VI

In addition to the questions you have seen so far, there are certain other types of questions dealing with cubes which often appear in competitive examinations. Some examples are given below:

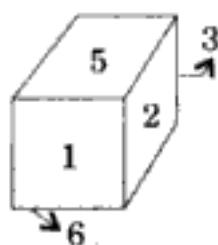
1. If the following figure is folded along the lines to form a cube, how many dots would be there on the face opposite the face having six dots?



- (A) 3 (B) 2 (C) 4 (D) 4

ANSWER: B

2. If the cube given below is turned twice in the right hand direction (\rightarrow), then the hidden numbers will be:

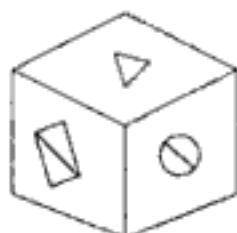


ANSWER: B

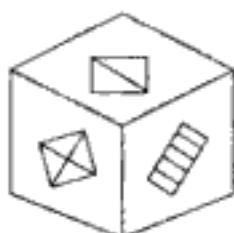
3. There are three cubes given below, each with a different design on each face. The cubes are shown in various views. Carefully examine the figures and determine your answers as per the following scheme.

- (A) If designs (i) and (ii) and (iii) are various views of one cube only.
(B) If all the three cubes (i) (ii) and (iii) are views of three different cubes.
(C) If designs (i) and (ii) are different views of the same cubes.
(D) If designs (i) and (ii) are different views of the same cube.

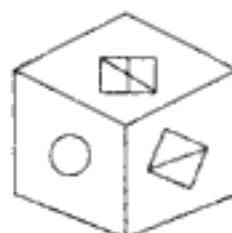
1.



i



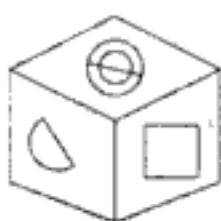
ii



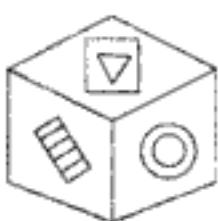
三

ANSWER: C

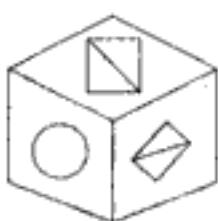
2.



1



三

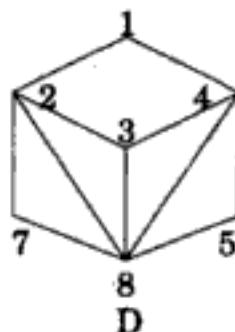
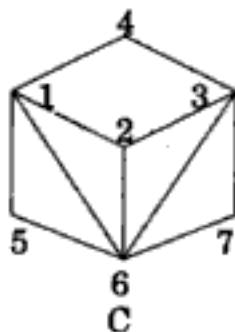
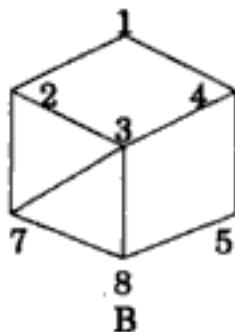
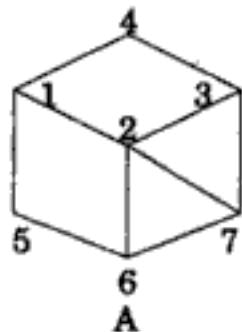
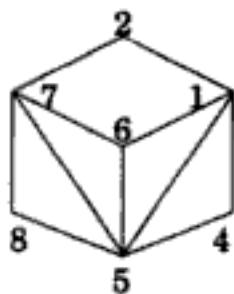
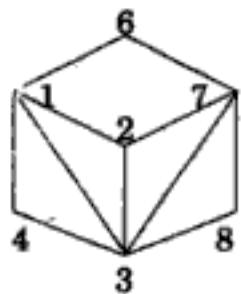


三

ANSWER: B

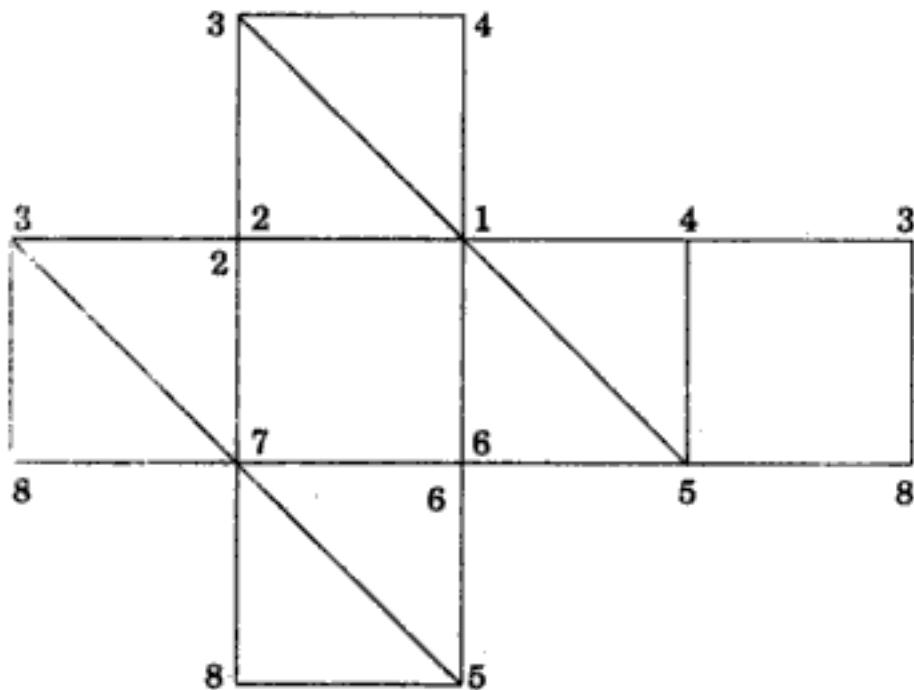
4. In the following diagrams two positions of a cubical block are shown. Each of the four sides has a cross-line, which is not found on the upper or the lower sides.

Select the correct one from the answer figures A, B, C and D.



ANSWER: B

Explanation: The development of the block is shown below.



Only response B can have the development matching the above one. In the rest of the blocks, point 2 is linked to point 6 or 8. This is not so in the original cube.

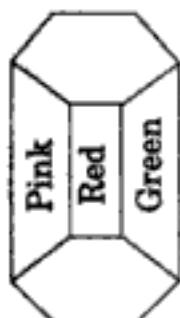
TYPE 23: MULTIDIMENSIONAL FIGURES/BLOCKS

The test of reasoning of various competitive examinations includes questions that deal with various aspects of multidimensional figures/blocks. According to the number of faces available on a block, each face is either painted in different colours or numbered or lettered. Two or three views of the block are given. As you have

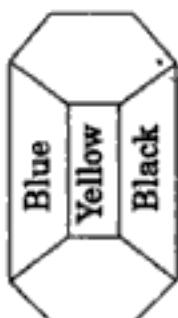
seen in the case of cubes, here also the questions are aimed at testing your ability to analyse the structure of the block from the given views.

Illustrations

1. Directions: The six sides of the following block are painted in red, green, blue, yellow, black and pink. Figures 1 and 2 show the horizontal views of the block with the various colours marked.

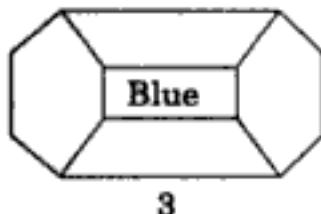


1



2

When the above block is shown in lateral view as in Figure 3 what will be the colours in the faces adjacent to the face with blue colour?

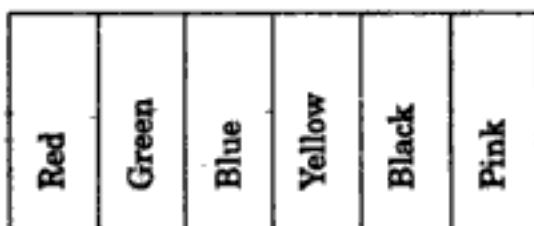


3

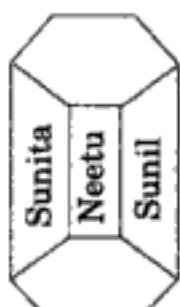
- (A) Red and green
- (B) Yellow and Black
- (C) Green and Yellow
- (D) Green and Pink

ANSWER: C Green and Yellow

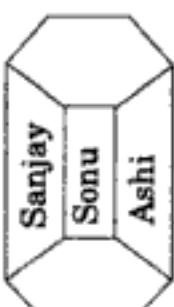
The following unfolded view will clarify the arrangement of colours:



2. Directions: Two vertical views of a six-sided block are given below in figures 1 and 2. On each face (side) of the block the names Sonu, Ashi, Sunita, Neetu, Sunil and Sanjay are engraved. Some of the names are visible in figure 1 and 2.



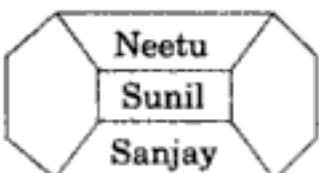
1



2

When the block is turned to a horizontal position as shown below in figure 3, which two names will be adjacent to Ashi?

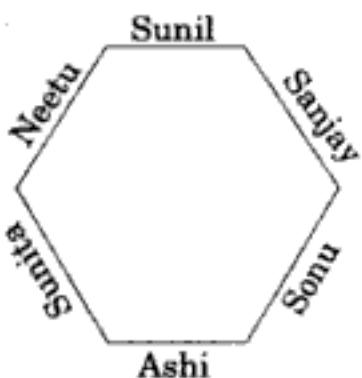
- (A) Sunil and Neetu
- (B) Sunita and Sanjay
- (C) Sunita and Sonu
- (D) Sanjay and Neetu



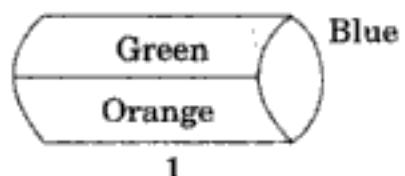
3

ANSWER: C Sunita and Sonu

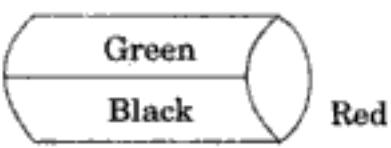
See the following figure showing the arrangement of names as engraved on the block.



3. Directions: Three views of a cylindrical block, marked 1, 2 and 3 are shown below. The cylinder is painted on six faces in six colours, namely black, green, yellow, orange, blue and red. Figures 1 and 2 show three faces, along with the colours painted on them.

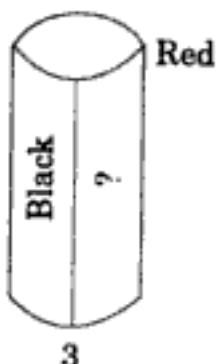


1



2

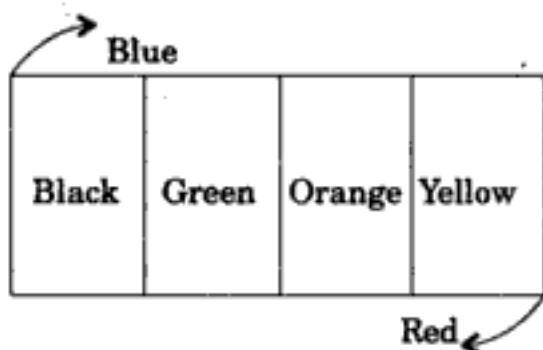
If the cylinder is viewed in the horizontal position as shown in Figure 3 below, what is the colour in the empty face (marked ?) ?



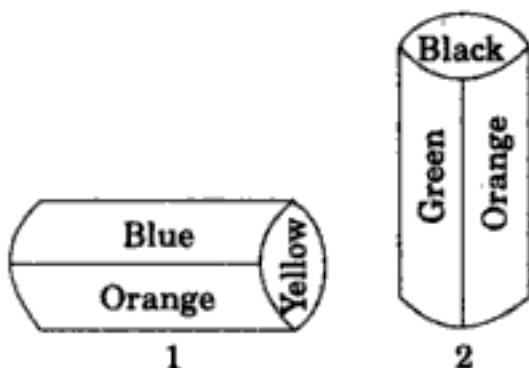
- (A) Orange (B) Green (C) Yellow (D) Blue

ANSWER: B Green

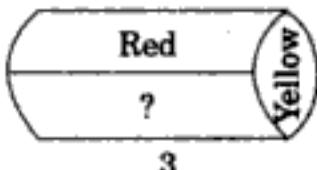
Refer to the figure given below to see all the faces of the cylinder, along with the colours.



4. Directions: A cylindrical block is painted in six colours, namely blue, orange, green, red, black and yellow, on its six faces. Two views of the block are shown below in figures 1 and 2 from different views



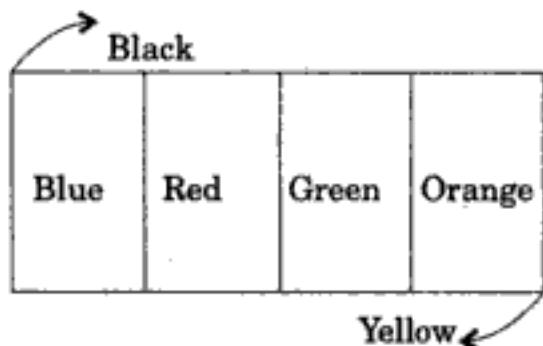
What will be the colour of the empty face (?) shown in figure 3 below?



- (A) Orange
 (B) Blue
 (C) Green
 (D) Yellow

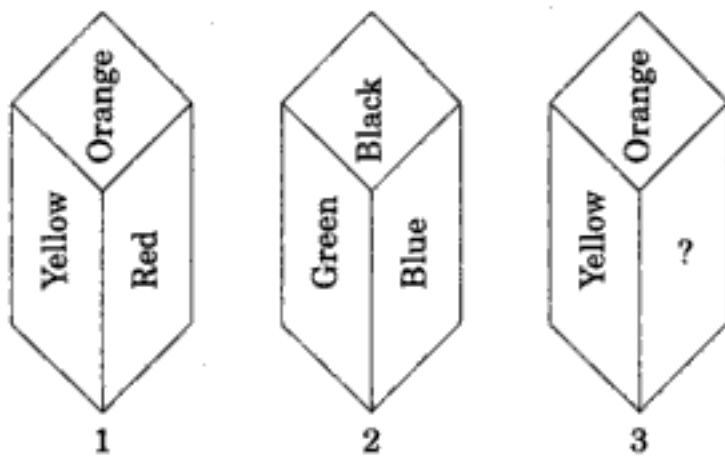
ANSWER: B Blue

If we cut open the cylinder, the arrangement of colours on the faces will be as shown below. Thus, the face marked as ? in the question will be coloured green.



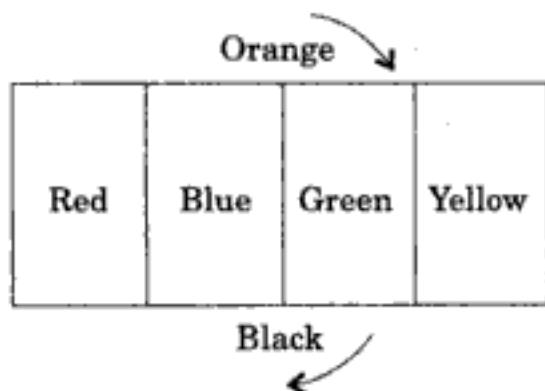
5. Directions: In the following figures, different views of a six-sided block are shown. The faces of the block are painted orange, black, red, blue, green and yellow. Using the colours shown in the views 1, 2 and 3, identify the colour of the face with the question mark.

- (A) Green
- (B) Red
- (C) Yellow
- (D) Blue

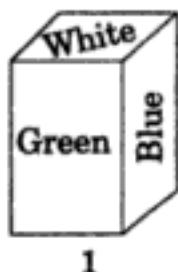


ANSWER: C Red

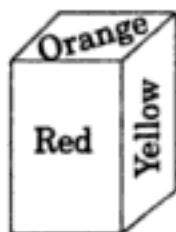
The figure given below shows the block with the faces open.



6. Directions : In the following figures, two six-sided blocks are given. Each side of the block is painted as shown in figures 1 and 2. The sides are white, yellow, orange, green, red, and blue. The arrangement of colours is shown on the blocks.



1



2

When blue colour is on top, which colour will be at the bottom?

- (A) Red
- (B) Green
- (C) Blue
- (D) Yellow

ANSWER: D

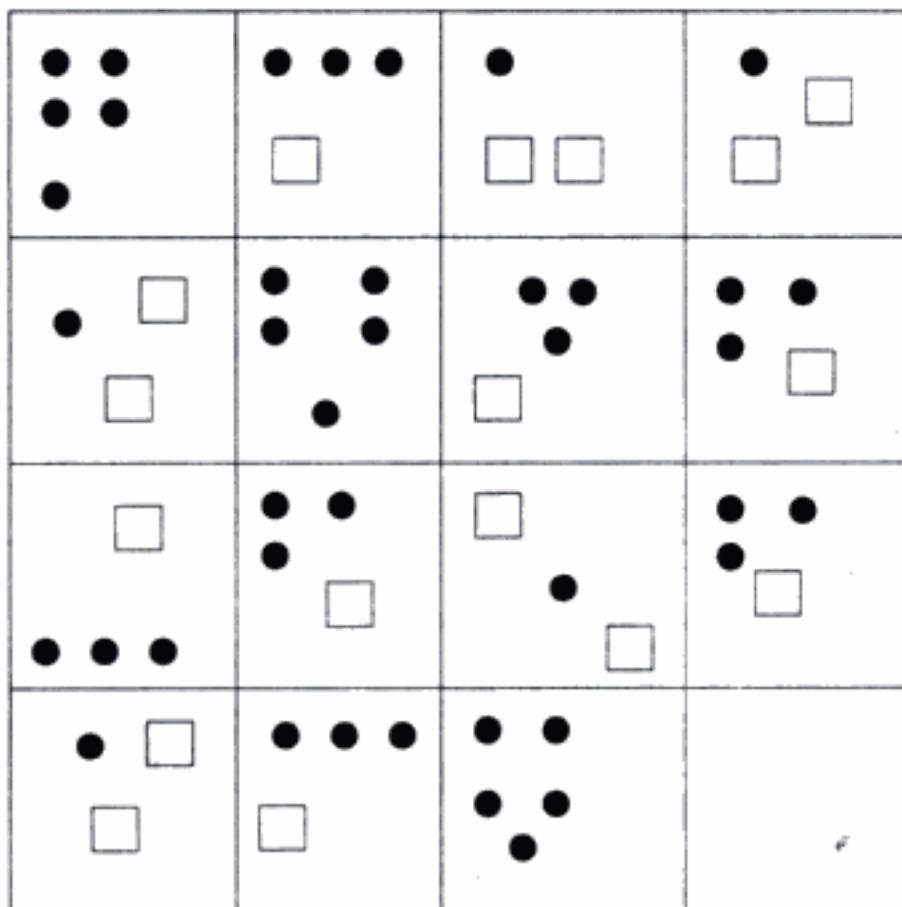
TYPE 24: MAGIC SQUARE

In these questions, you are given a square figure divided into 12 small squares. In each small square, different symbols are given. Each symbol is assigned a value or number. The value of the symbols in each small square sums up to the same value vertically, horizontally and diagonally. One small square is left blank in which you have to fill in a square from the answer choices such that the total of each row vertically, horizontally and diagonally remains the same.

Illustrations

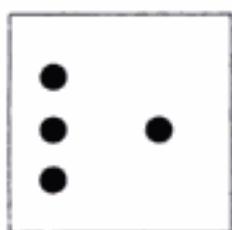
Directions: In each of the following questions, a block is divided into 16 squares of same size. Each square has a certain number of symbols while one square is blank.

- The block below has 16 squares. In the block the squares add up to 20, diagonally, horizontally and vertically. The value of each black dot is one. Find the value of the small square and select from the answer choices the square that will replace the question mark (?) Remember that you must keep the total of all squares to 20.

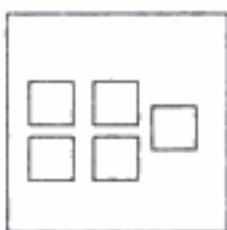


ANSWER: D

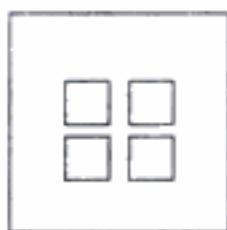
A careful study of the squares and the value of various symbols reveals that the black dot has a value one (1) and the value of each small square should be two (2). With this system, we find that the squares total up to 20 horizontally, vertically and diagonally.



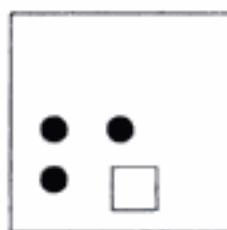
A



B



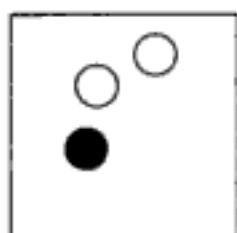
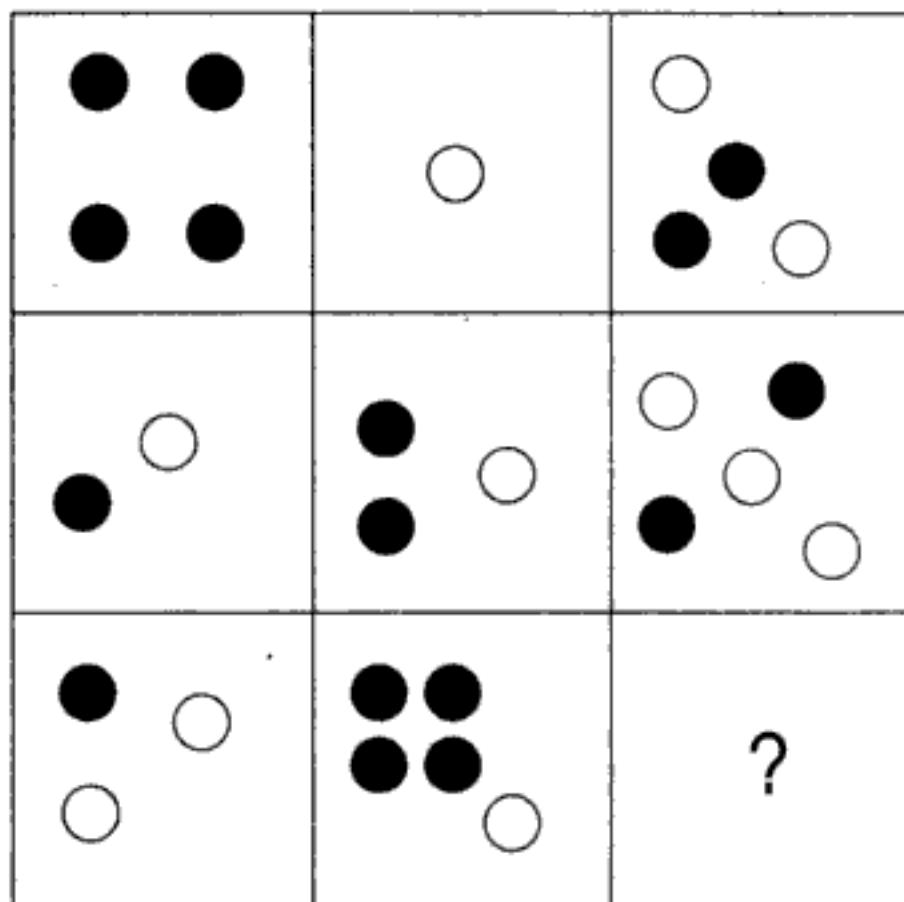
C



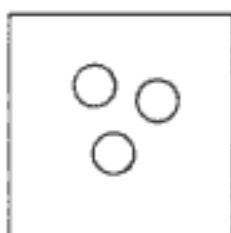
D

2. In the block given below, the values of squares added horizontally, vertically and diagonally come up to 15. Further, all numbers from 1 to 9 are represented by the individual values of the squares. In each square, the value of the white ball (o) is one. From the answer choices, select the square that should replace the question mark to keep the total to 15.

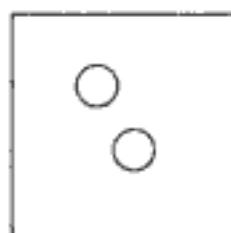




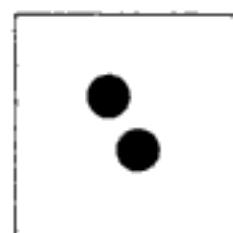
A



B



C

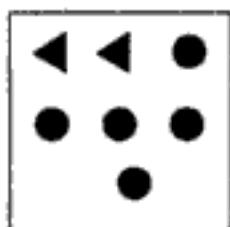
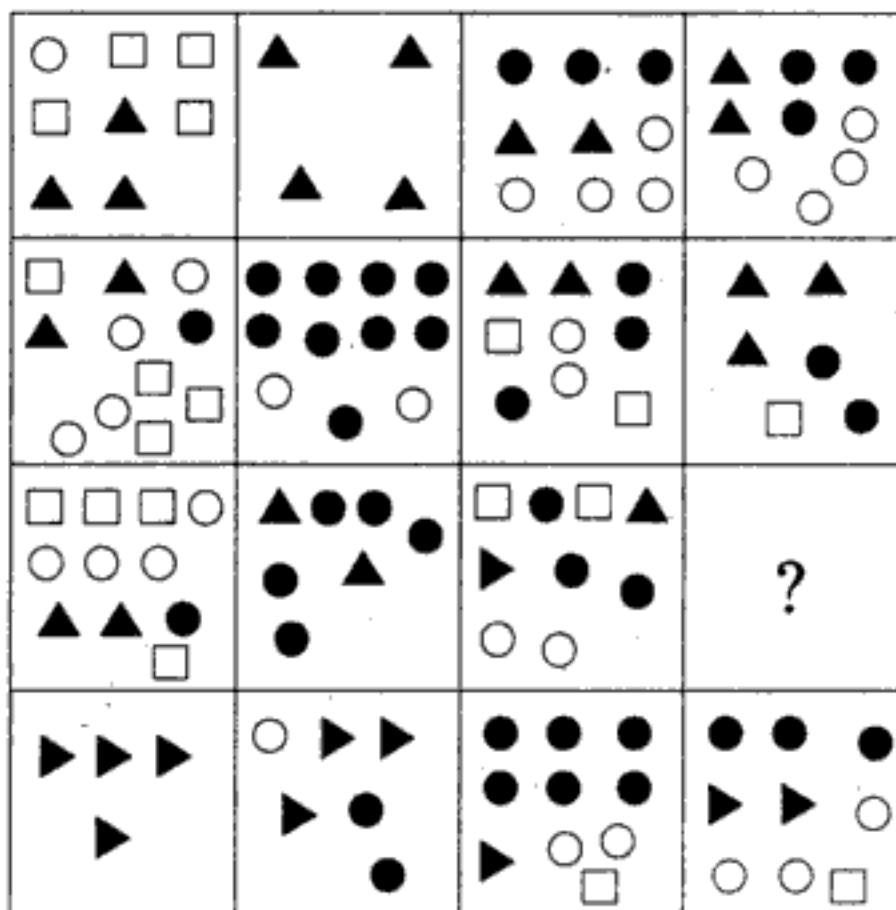


D

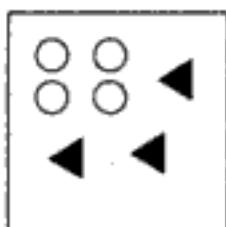
ANSWER: C

The value of the white ball (o) is given as one. It is therefore obvious that the value of the black ball should be two. The question mark should be replaced by a square with two white dot so that the sum of columns, horizontally, vertically and diagonally remains 15 as desired in the question. Also, this will ensure that all numbers from 1 to 9 are represented in the block.

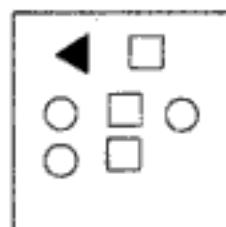
3. In the following question, the values of the squares added, vertically, horizontally and diagonally come up to 80. Each symbol has a different value. For example, the white ball and the small square both have a value one (1). The black triangle has a value five (5). Select from the answer choices the square that has adequate number of relevant symbols to ensure that each column vertically, horizontally and diagonally, totals 80.



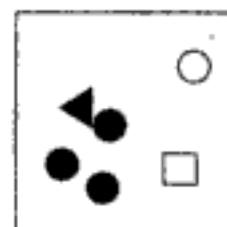
A



B



C



D

ANSWER: A

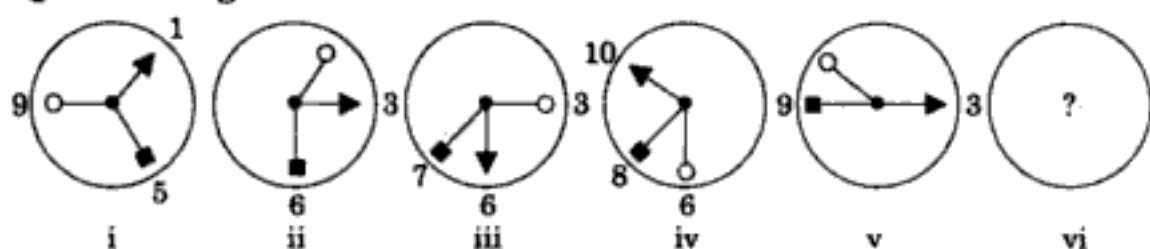
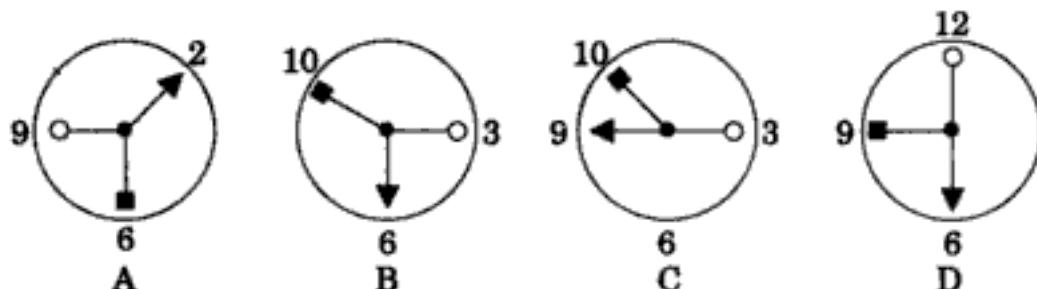
It contains two black triangles worth 10 and five black circles worth 10, making total 20. The value of black dot is 2 which was to be determined in this question.

TYPE 25: CLOCK MOVEMENT QUESTIONS

These are questions based on the movement of the hands of a clock. The hands may be moving in either direction, clockwise or anticlockwise with varying time intervals. You are given four or five different successive figures showing movement of the hands and are asked to determine the next position.

Illustrations

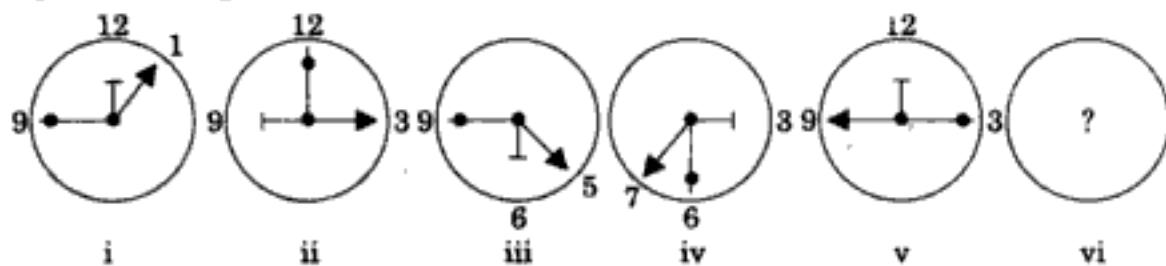
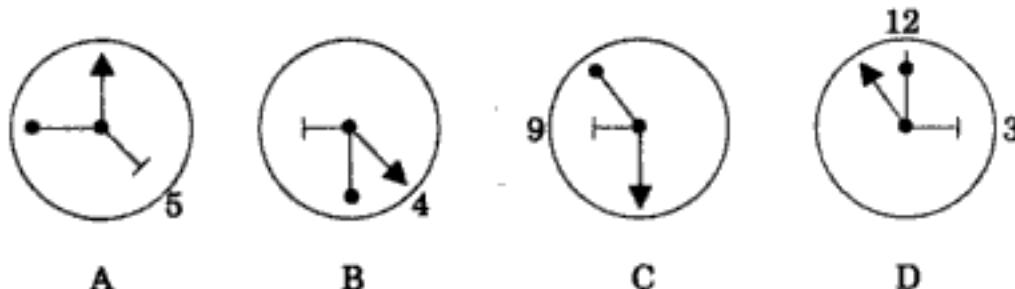
Directions: On a peculiar clock shown here, the hands move in an unusual way. Discover the system as revealed from the five positions, (i to vi) shown below, and find the next position from the answer figures (A to D) given below.

1. Question Figures**Answer Figures****ANSWER: C**

The difference in the movement of the arrow increases by one, i.e. 1(2) 3(4-5-) 6(7-8-9) 10(11-12-1-2)3 and (4-5-6-7-8)9. The numbers in brackets represent the hours skipped each time by the arrow.

The hand with the small circle takes the place of the arrow hand every time.

The hand with the black square moves by one hour at a time, i.e. 5, 6, 7 and so on.

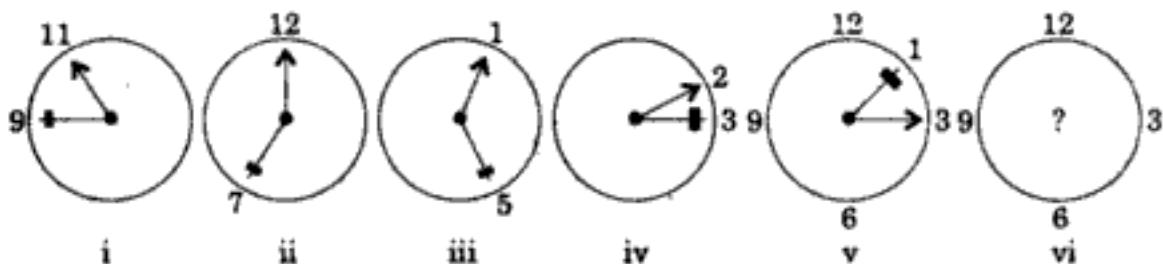
2. Question Figures**Answer Figures****ANSWER: D**

The hand with the small line (—) moves anticlockwise, each time skipping two hours, i.e. 12 (-11, 10)9, 9(-8, 7) 6, 6(-5,4)3, 3(-2,1)12, 12(-11,10)9 3(-4,5)

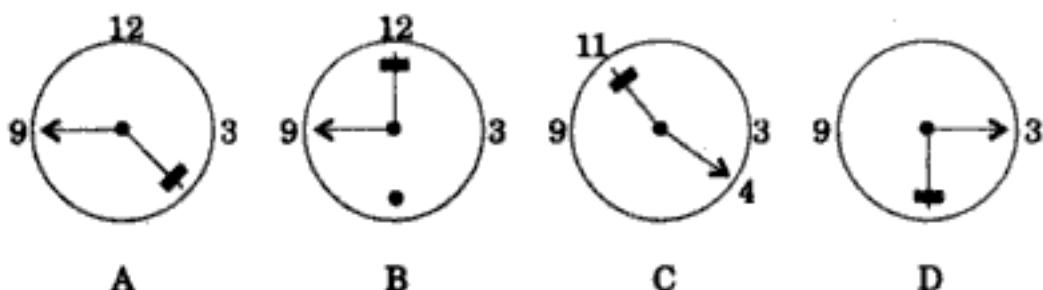
The arrow is moving each time by one hour, i.e. 1(2) 3, 3(4) 5, 5(6) 7, 7(8) 9, 9(10) 11.

The hand with black circle takes the place of the previous position of the hand with a small line.

3. Question Figures



Answer Figures



The arrow moves clockwise one hour every time. The black square hand moves anticlockwise with a gap of one hour each time.

ANSWER: C

Section

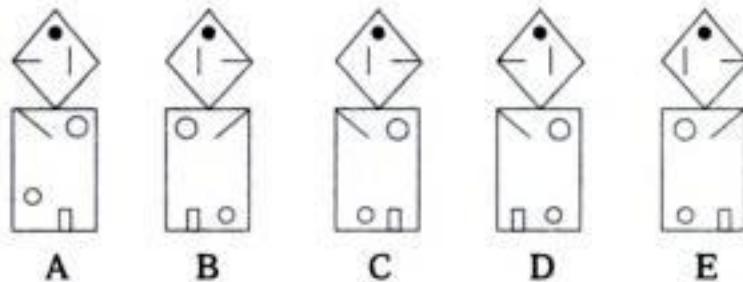
3

Non-Verbal Practice Tests

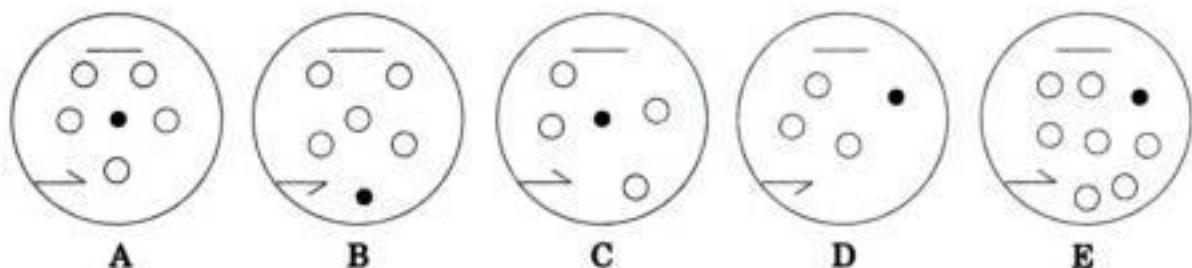
TEST PAPER 1

Directions: Which among the following figures is different from the rest?

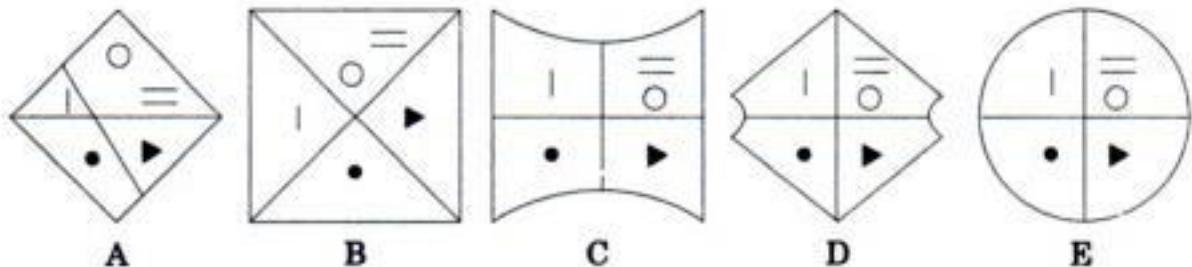
1.



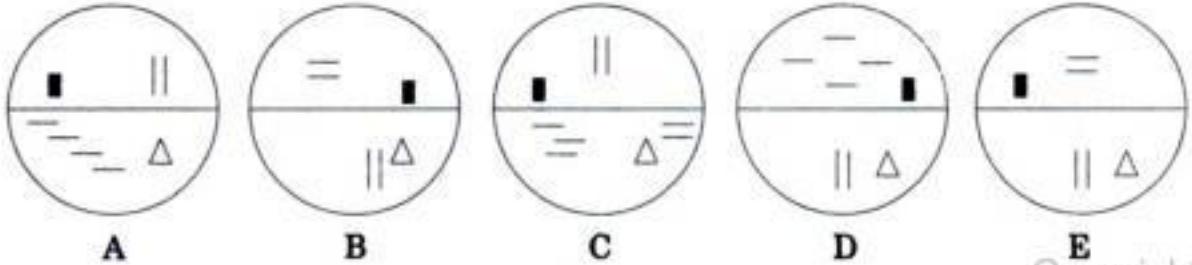
2.



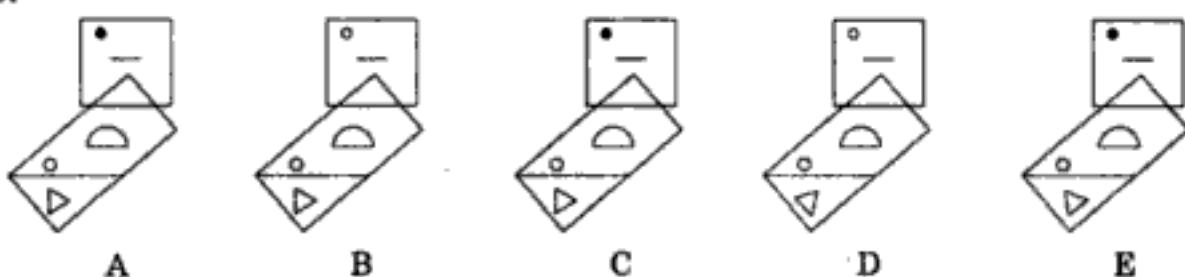
3.



4.

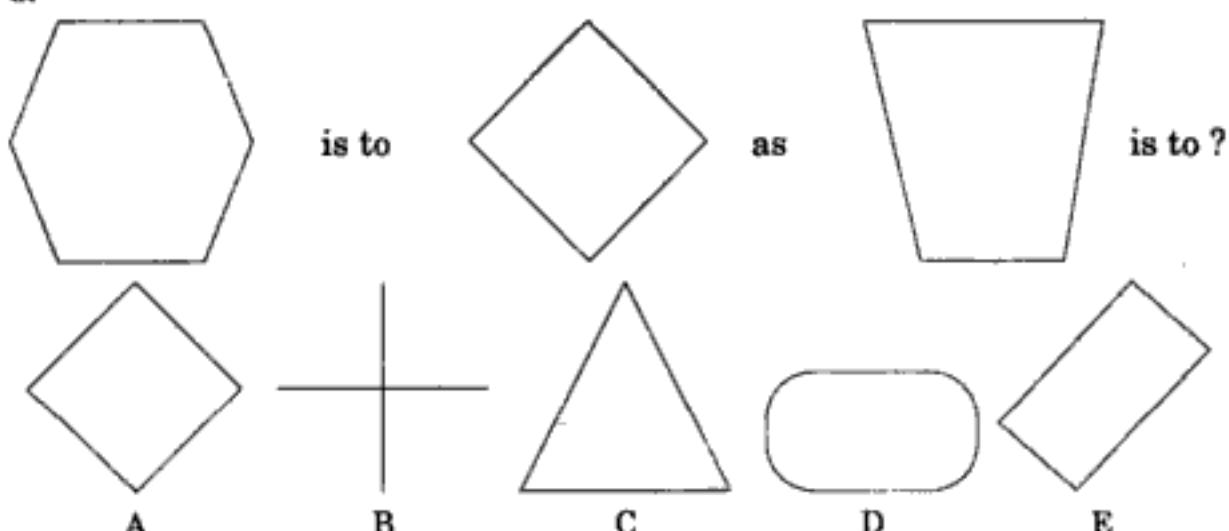


5.

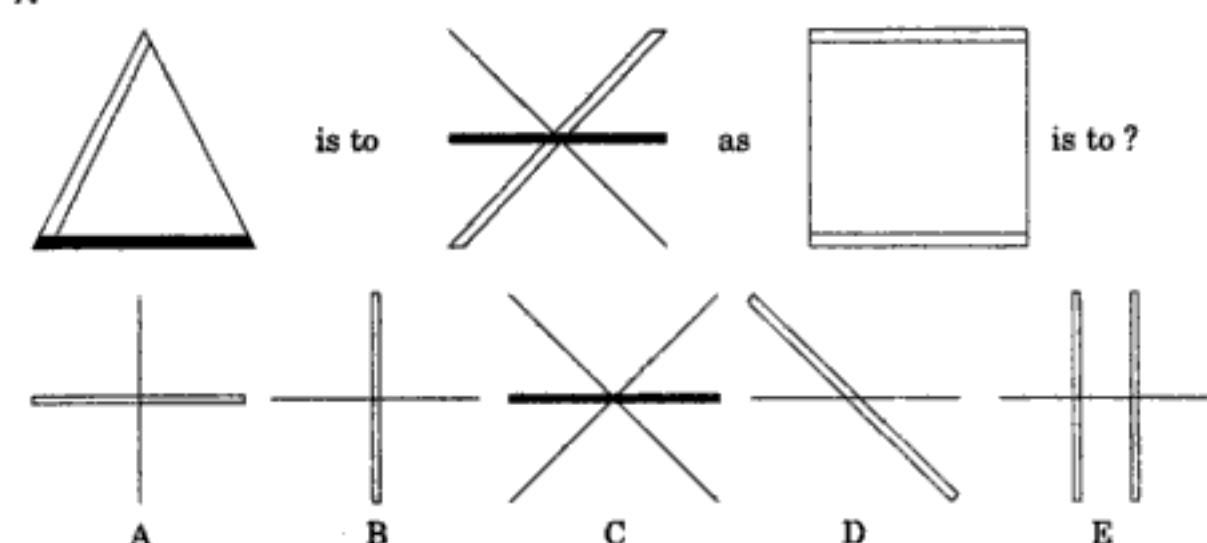


Directions: In the following questions, the figures have a certain relationship. Find the appropriate figure from the answer figures to complete the relationship.

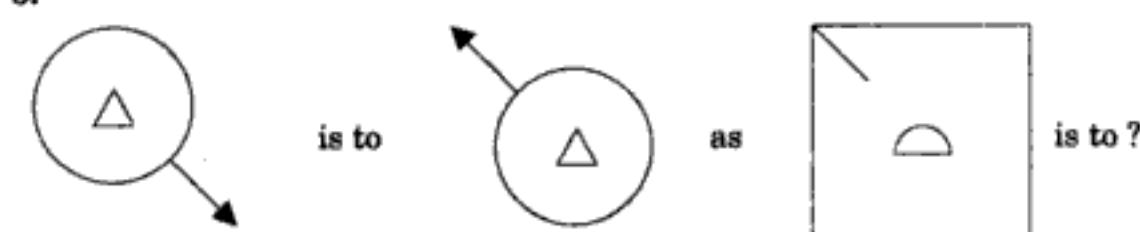
6.

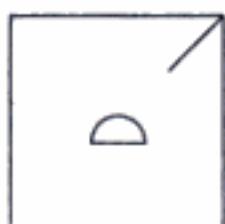


7.

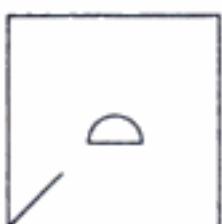


8.

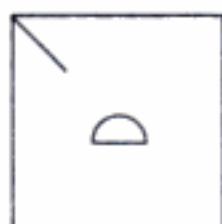




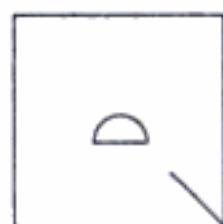
A



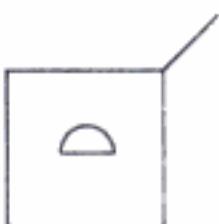
B



C



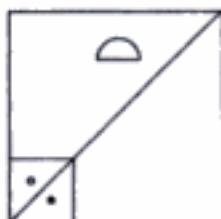
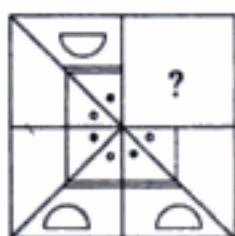
D



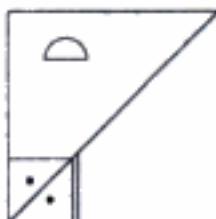
E

Directions: In the following questions, an incomplete figure is given as the question figure, followed by answer figure. Select the answer figures that will complete the question figure to fit in the blank portion in order to create a complete design.

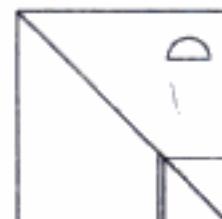
9.



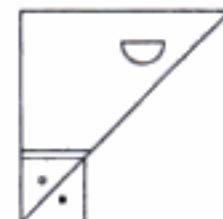
A



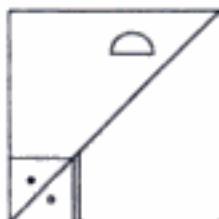
B



C

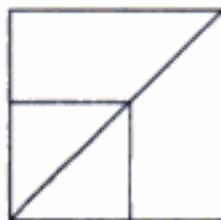
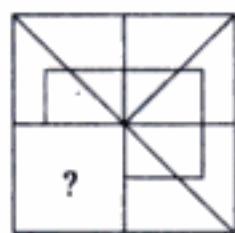


D

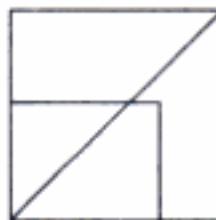


E

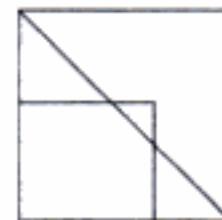
10.



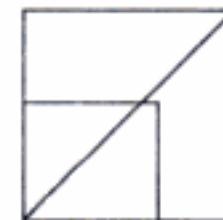
A



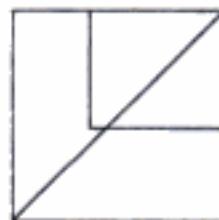
B



C

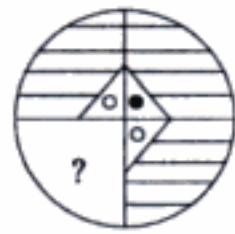


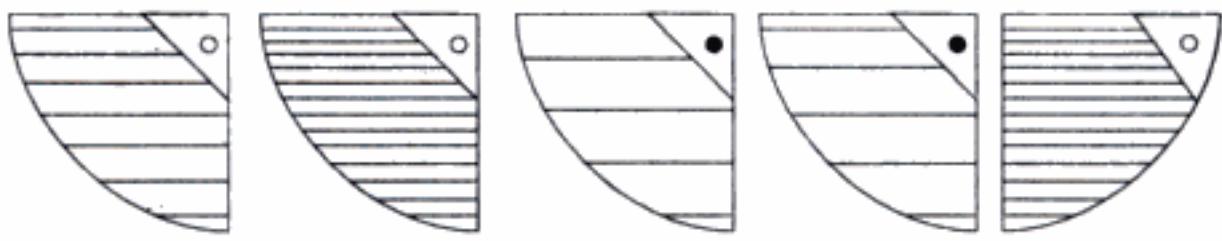
D



E

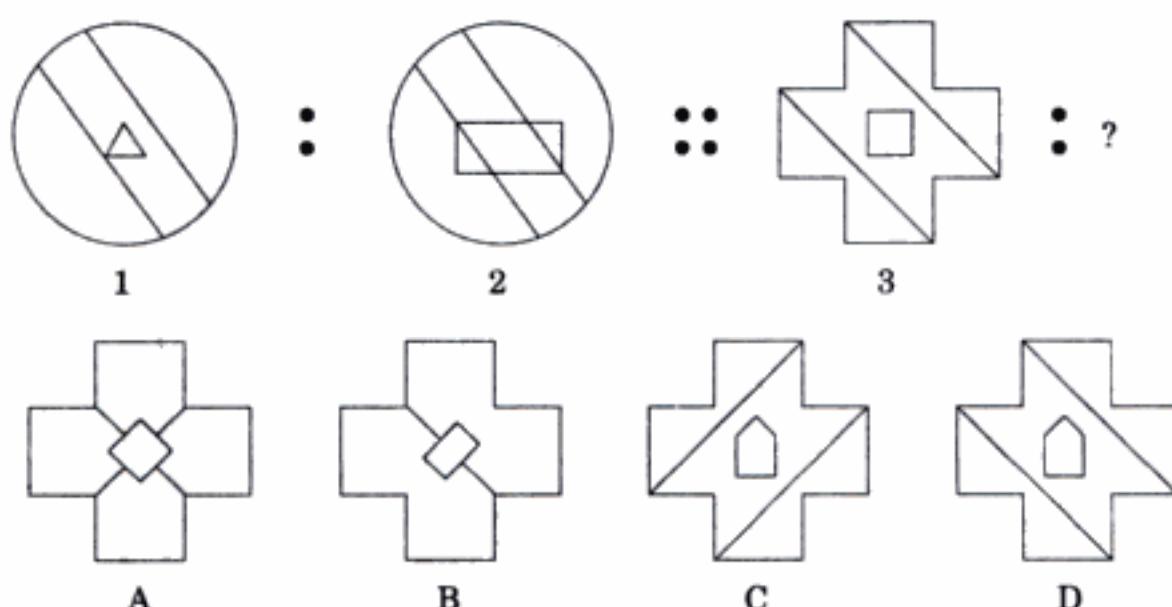
11.



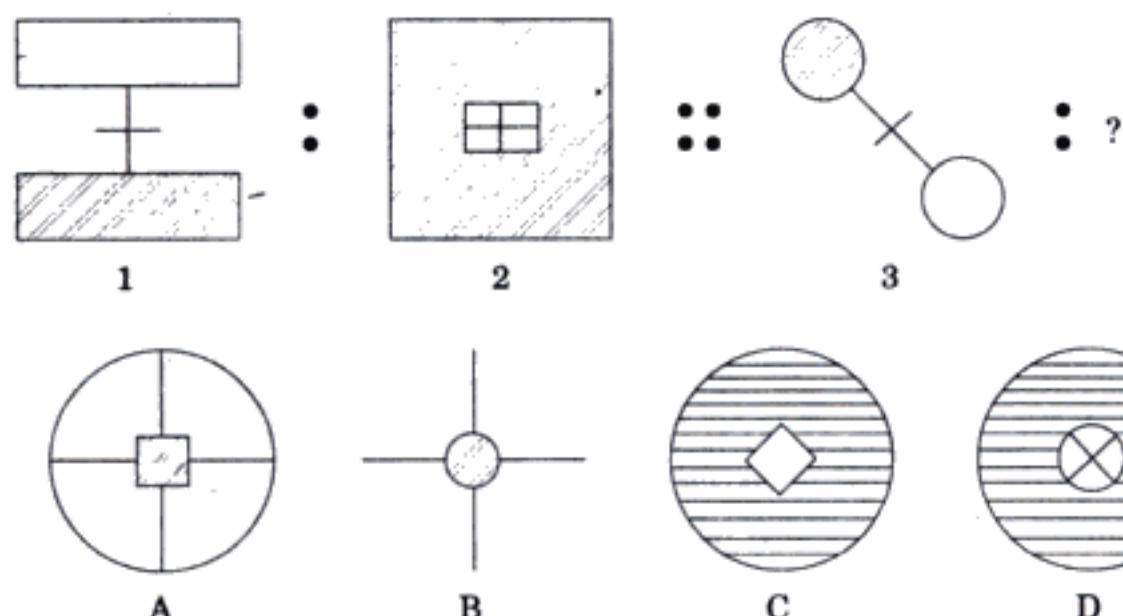


Directions: In the following questions, Figure 1 and Figure 2 have a certain relationship (analogical pattern relationship). Select the answer figure that has a similar relationship with figure 3 in the question.

12.



13.

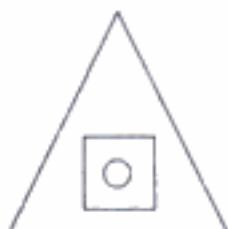


14.



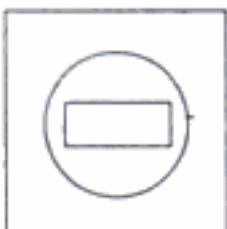
1

:



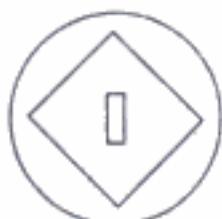
2

::

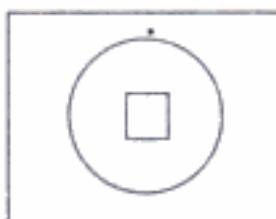


3

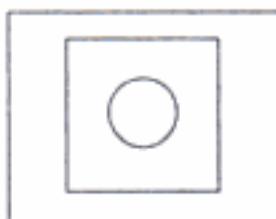
:: ?



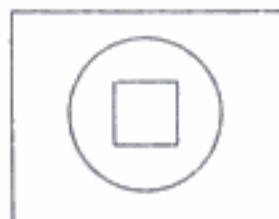
A



B



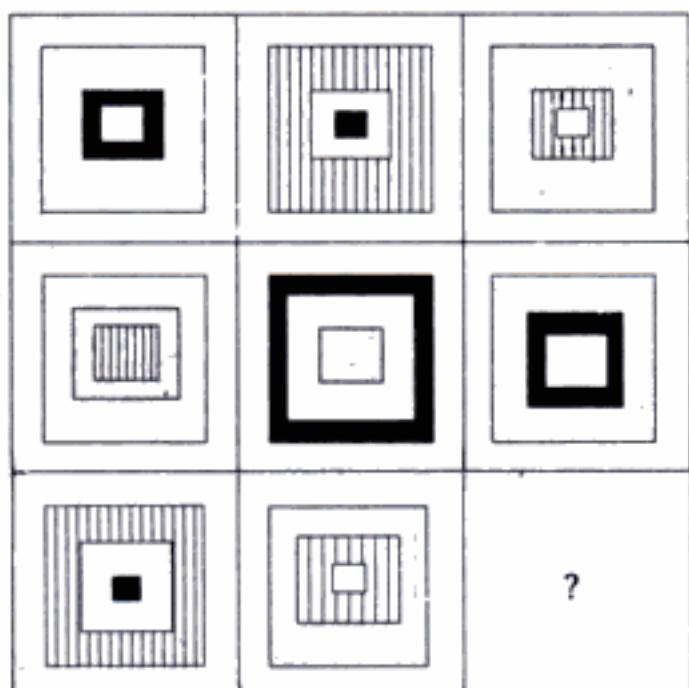
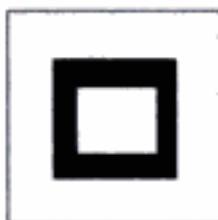
C



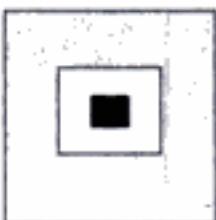
D

Directions: Select the answer figure that will fit in the blank space in the question figure, maintaining the pattern in proper sequence.

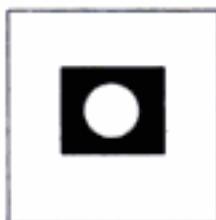
15.

**Answer Figures**

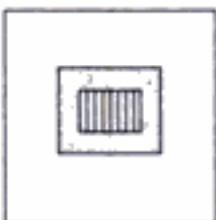
A



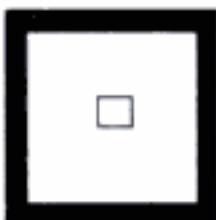
B



C

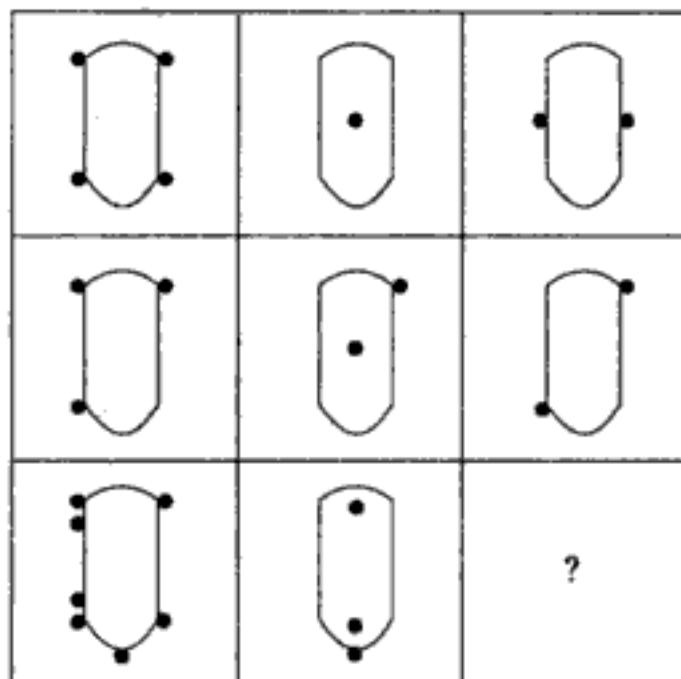
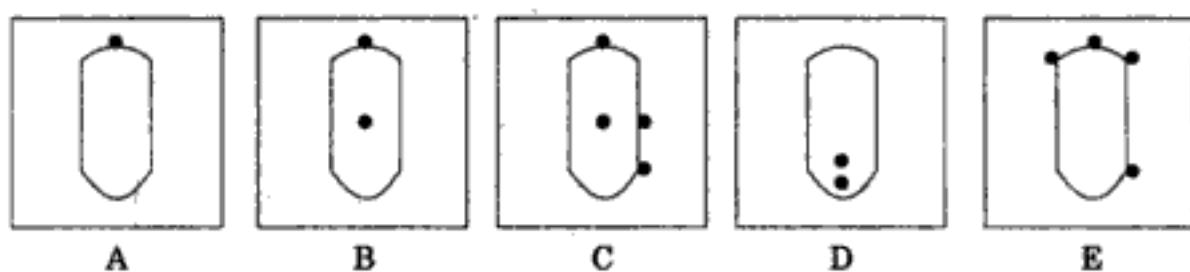


D

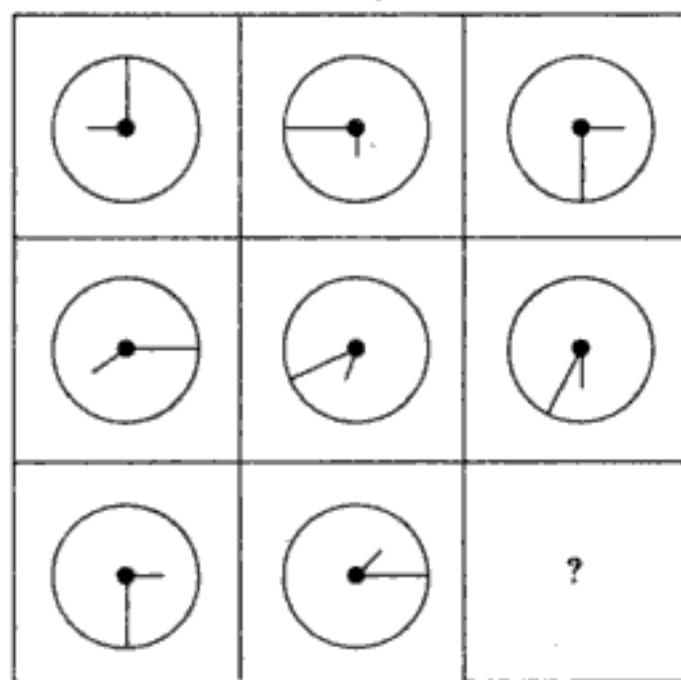


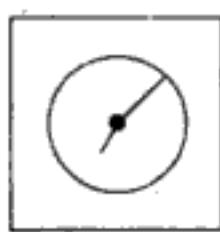
E

16.

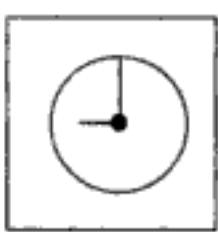
**Answer Figures**

17.

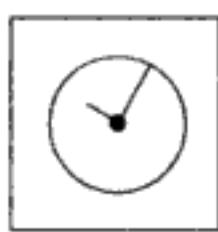


Answer Figures

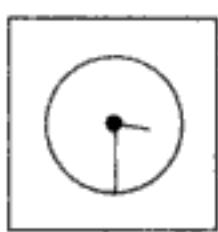
A



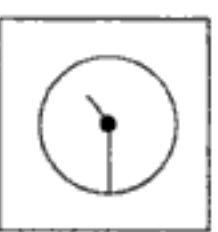
B



C



D



E

18.

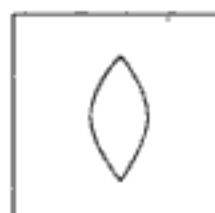
		?

Answer Figures

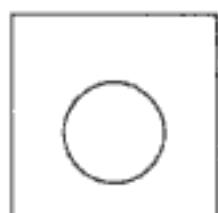
A



B



C

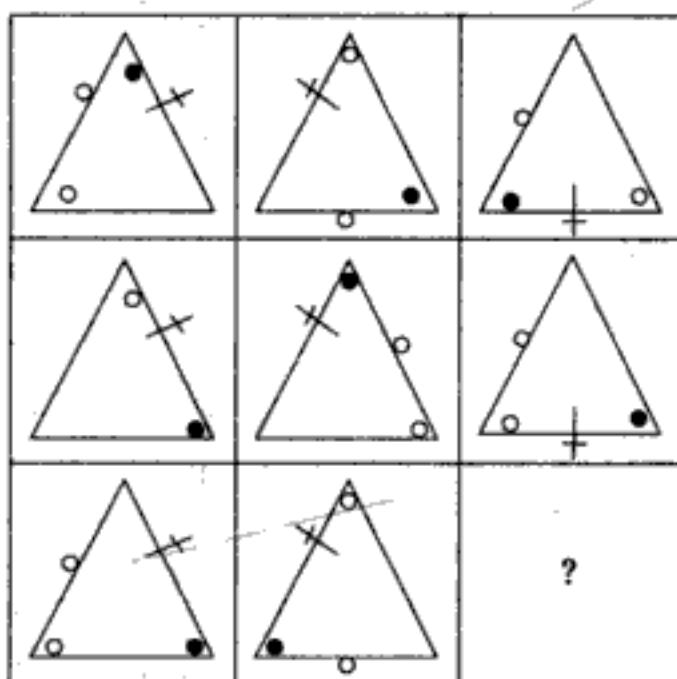
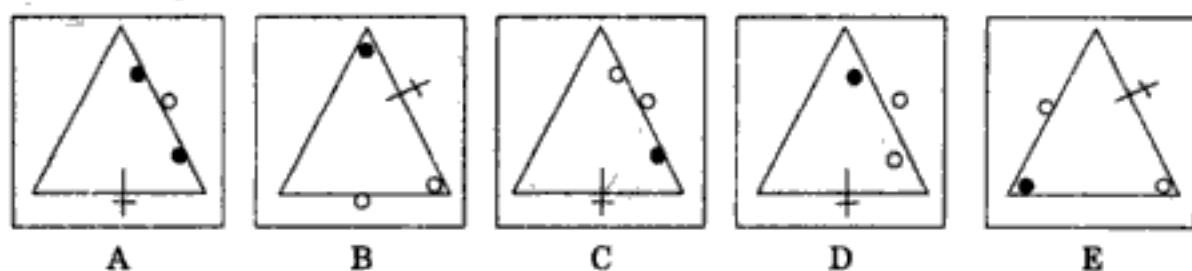


D

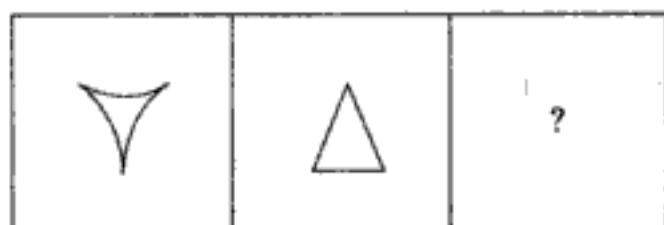
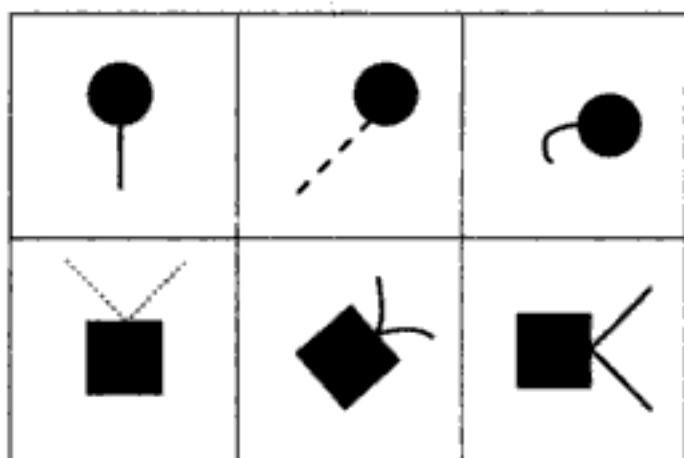


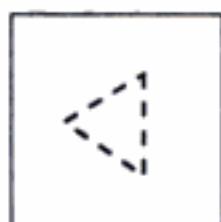
E

19.

**Answer Figures**

20.

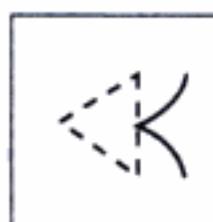


Answer Figures

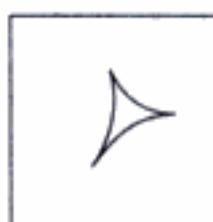
A



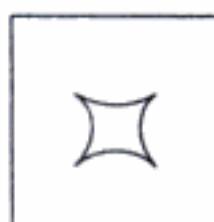
B



C



D



E

21.

Directions: Select the answer figure that will fit in the blank square in the following series.

O			-
X			
•	=		

1

		-	
O		X	
•			

2

	-		
X		•	
O			

3

		?	
		•	

4

•	=		
O			

A

		-	
•	O		
X	=		

B

		•	
-	X		
=	O		

C

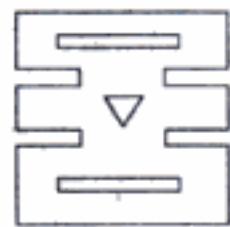
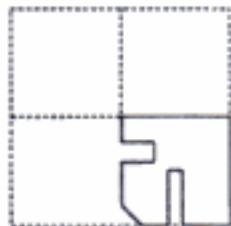
			•
-	X		
=	O		

D

O			
		•	
-	X		

E

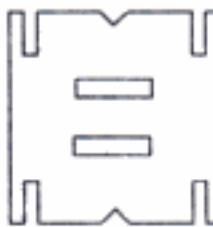
Directions: A square sheet of paper is folded along the dotted lines and then cuts are made as shown in the question figure. How would the sheet look when unfolded? Select your answer from the choices given under each question figure.

22.

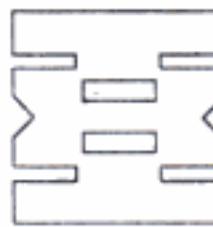
A



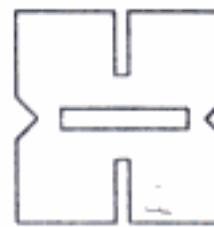
B



C

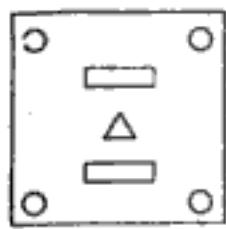
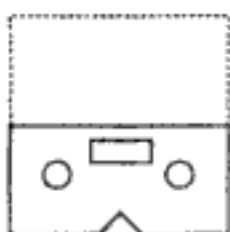


D

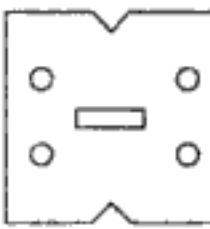


E

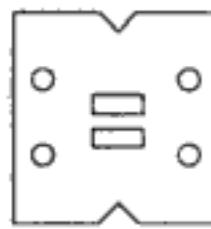
23.



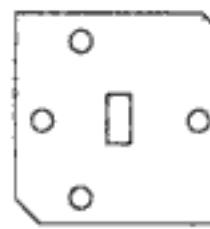
A



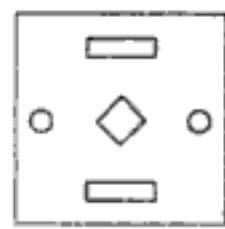
B



C

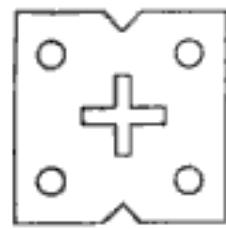
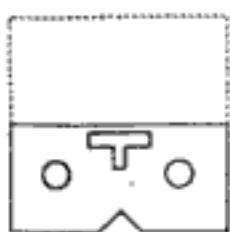


D

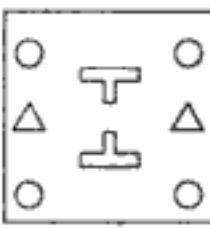


E

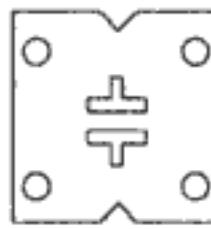
24.



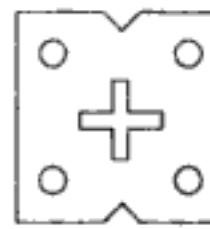
A



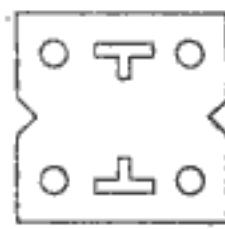
B



C

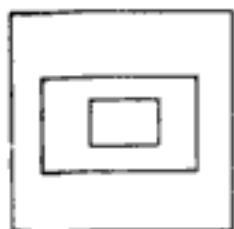


D

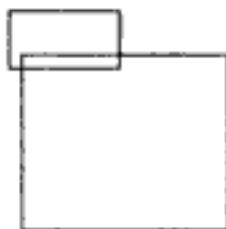


E

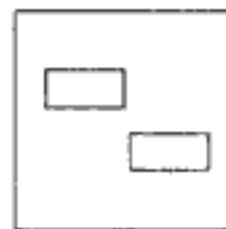
Directions: Study the following diagrams, in questions 25-31, which represent relationships among various classes/items. You have to determine which of these diagrams best illustrates the relationship among the various classes/items given in the questions.



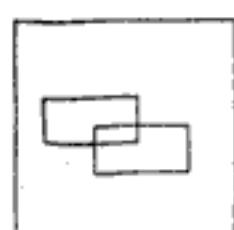
1



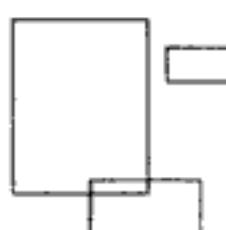
2



3



4



5

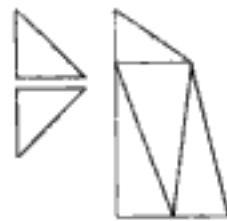
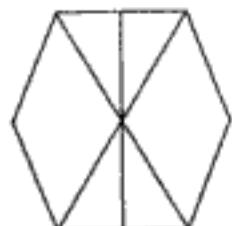


6

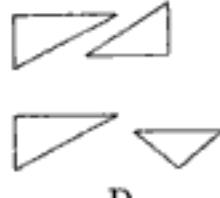
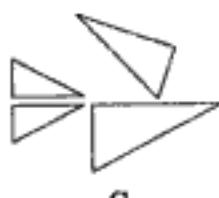
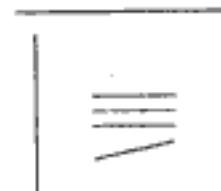
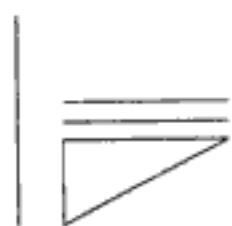
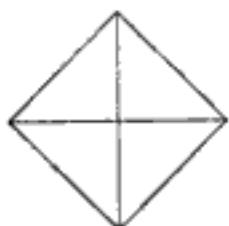
25. District, village, tehsil
26. Rat, living creatures, elephant
27. Father, brother, mankind
28. Bachelors, doctors, female nurses
29. Liquid, gas, solid
30. Lucknow, Kanpur, Uttar Pradesh
31. Mothers, sisters, females

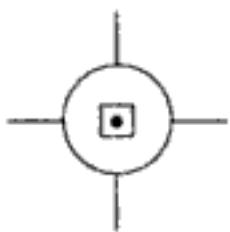
Directions: In the following questions, a key figure is given, followed by four answer figures. Select the answer figures whose components exactly make up the key figure.

32. Key Figure

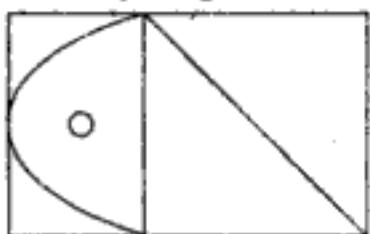


33. Key Figure



34. Key Figure

- A** **B** **C** **D** **E**

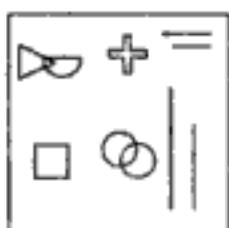
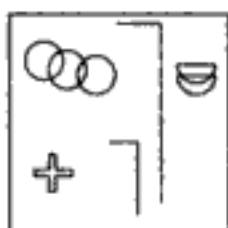
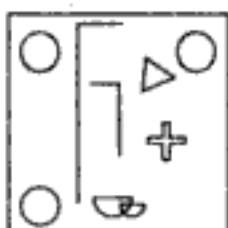
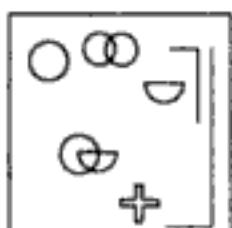
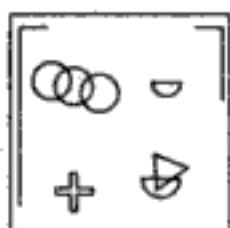
35. Key Figure

- A** **B** **C** **D** **E**

Directions: In the following questions, a key figure is given which contains certain items/components. Under each key figure, answer figures are given. You have to select the answer figure that contains the maximum number of items/components shown in the key figure.

36. Key Figure**R****C****D**

37. Key Figure



A

B

C

D

38.



A

B

C

D

Directions: In each row given below, two of the three designs/shapes on the left represent the same shape turned around, but not over. Select from answer choices two of the designs/shapes which are rotated versions of the pair on the left.

39.



1

2

3

4

(A) 1 and 3

(B) 1 and 4

(C) 2 and 4

(D) 2 and 3

40.



1



2

3



4

(A) 1 and 3

(B) 2 and 3

(C) 3 and 4

(D) 1 and 2

41.



1



2



3



4

(A) 1 and 4

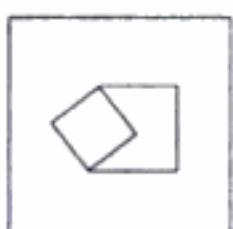
(B) 3 and 4

(C) 2 and 3

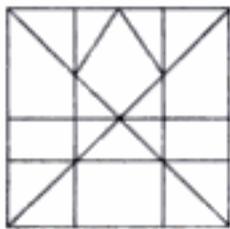
(D) 2 and 4

Directions: Each question below has a block X, that contains a basic design. The four blocks that follow have a group of more complex figures. In one of these figures, the pattern of block X is hidden. Identify the block.

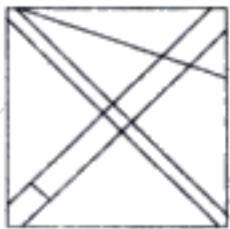
42.



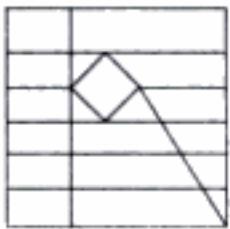
X



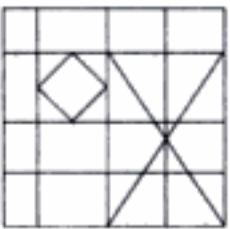
A



B

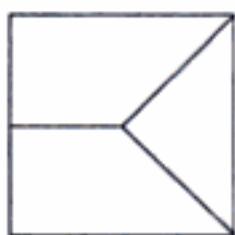


C

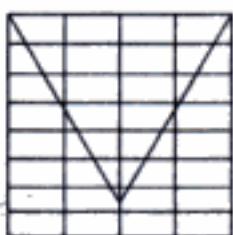


D

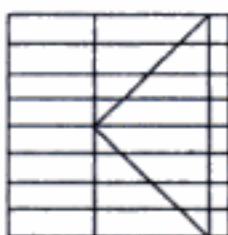
43.



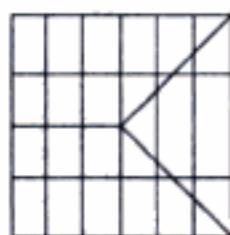
X



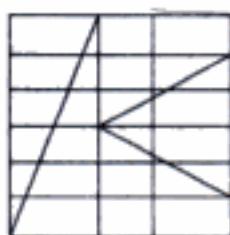
A



B

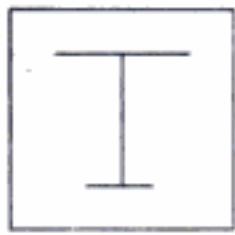


C

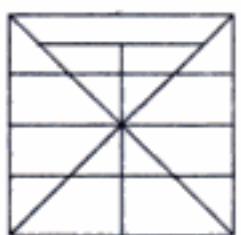


D

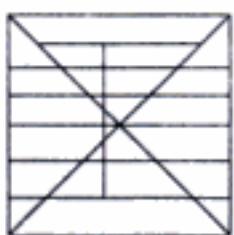
44.



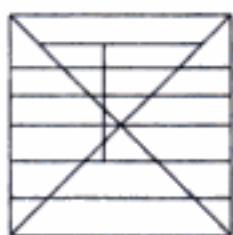
X



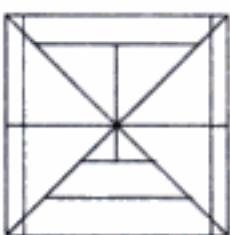
A



B

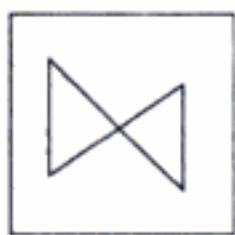


C

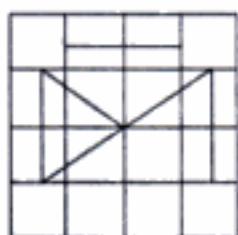


D

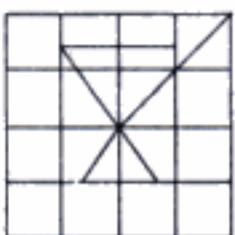
45.



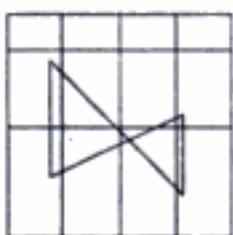
X



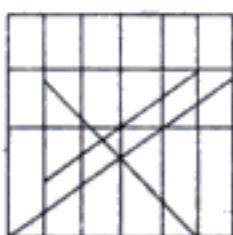
A



B



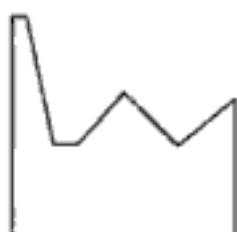
C



D

Directions: Two of the cardboard shapes shown in each of the following questions will fit together to make a perfect square. Select two such pieces from the given choices.

46.



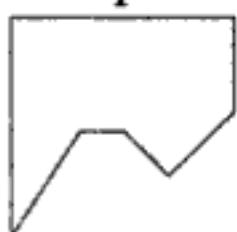
1



2



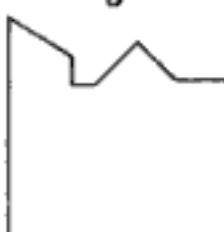
3



4



5



6

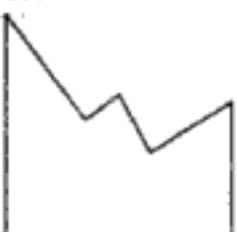
(A) 1 and 3

(B) 2 and 5

(C) 2 and 6

(D) 1 and 5

47.



1



2



3



4



5



6

(A) 2 and 6

(B) 3 and 4

(C) 1 and 6

(D) 3 and 5

Directions: Two among the following figures in each question are out of place. Identify those figures from the given set of figures.

48.



1 and 3



2



3



4



5



6

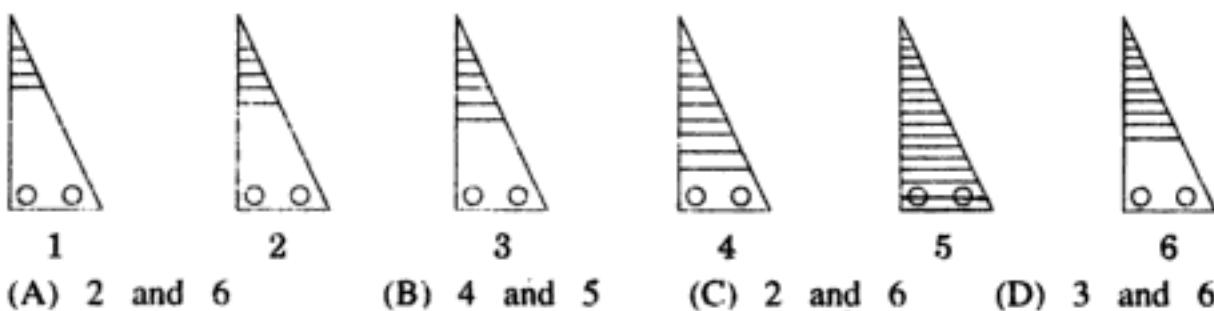
(A) 1 and 3

(B) 4 and 6

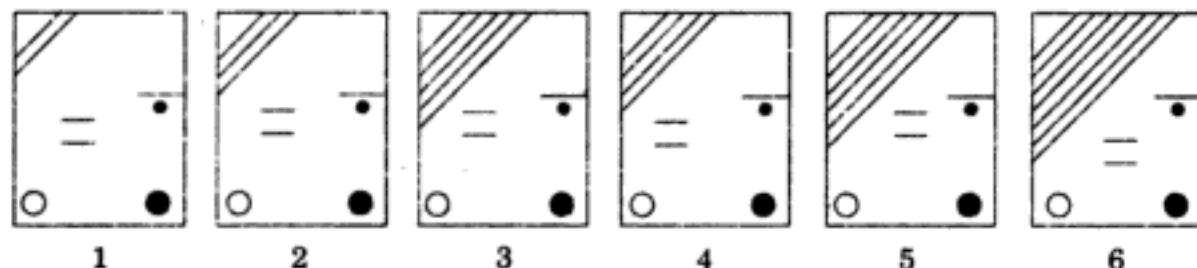
(C) 3 and 6

(D) 3 and 6

49.



50.



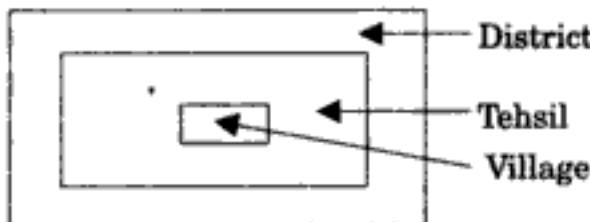
Answers and Explanations

- (C) The line segments should be touching the main figures on the same sides of both the upper and the lower figures. (i.e. horizontal line on upper figure and diagonal line on the lower figure)
- (C) All others have an odd number of small circles in the main figure.
- (A) All the other figures are divided into four identical parts of the same size.
- (C) All the other figures have even number of horizontal lines, on both upper and lower sides.
- (D) In all other figures, the small triangle is pointing towards the right-hand side, whereas in (D), the base of the triangle is parallel to the left side line of the rectangle.
- (B) The number of lines in the figure decreases by two.
- (A) The sides of the first figure are parallel to those in the second figure.
- (D) The first figure is rotated clockwise to obtain the second figure.
- (D) Note the symmetrical relationship of black and white dots.
- (E)
- (C)
- (D) The number of lines in the internal figures increase by one each time. The direction of the two parallel lines crossing the main figure should also be kept the same.
- (D) The small shaded figure enlarges and the unshaded figure moves to the centre.
- (D) The innermost figure takes the place of the outer figure while the second figure remains in its position.

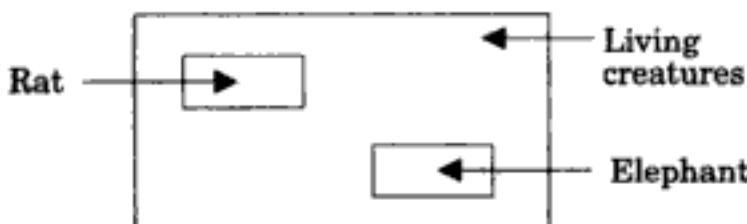
15. (D) The shading is moving progressively towards the centre in the sequence; white, black, diagonal shading, horizontal shading, dots, etc.
16. (E) When the inner dot is one, the outer dots are six in the first two rows. In the third row, the number of inner dots is two, therefore the number of outer dots should be twelve.
17. (C) In each row, the hour hand moves backwards regularly. The minute hand moves to where the hour hand was in the earlier figure.
18. (A) Each row has three different designs, and the shading varies.
19. (D) The triangles, the cross, and the circles rotate anticlockwise. The inner dots occupy each corner of the triangle in turn.
20. (A) Lines are either straight, dotted or bent.
21. (D) The white dot moves diagonally from the left square; the minus sign (-) moves vertically from right to left; the black dot moves diagonally upwards from the bottom left square; the cross changes position from left to right alternately and the equal to sign (=) remains fixed in the bottom third square.
22. (D) 23. (C) 24. (C)

For questions 25 to 31 note the following diagrams:

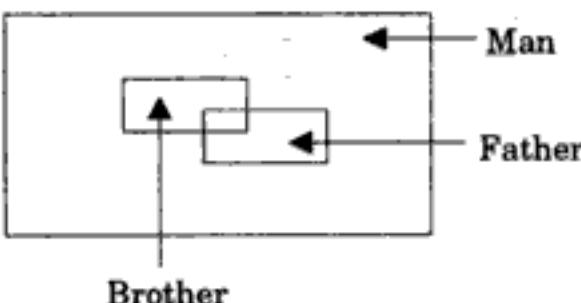
25. (1)



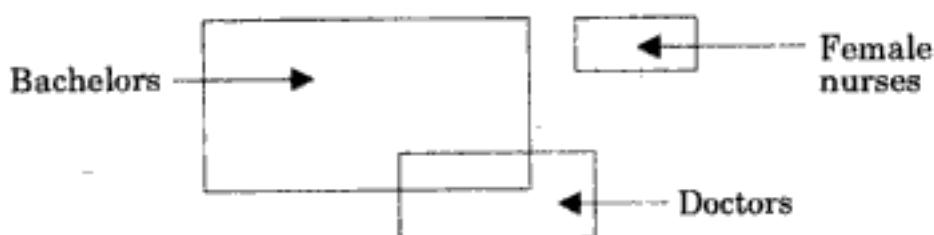
26. (3)



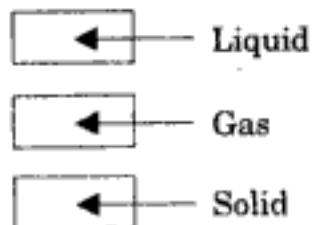
27. (4)



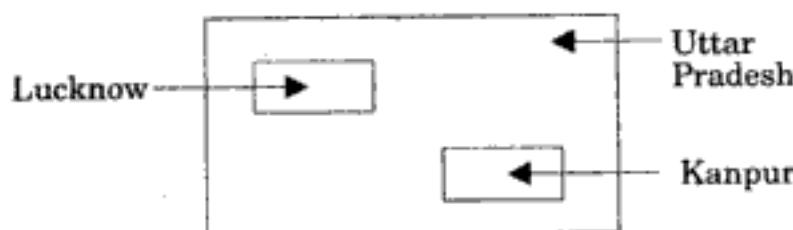
28. (5)



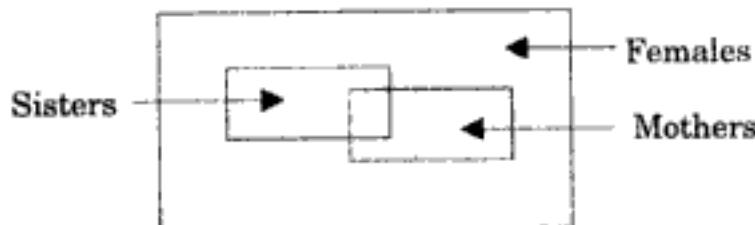
29. (6)



30. (3)



31. (4)



32. (D)

33. (B)

34. (C)

35. (C)

36. (C)

37. (B)

38. (C)

39. (D)

40. (D)

41. (C)

42. (D)

43. (C)

44. (D)

45. (C)

46. (D)

47. (B)

48. (D) As the shading is gradually increasing, figure 3 will be in place of figure 5.

49. (B) There is a gradual increase in shading. Therefore figure 4 will come in place of figure (5).

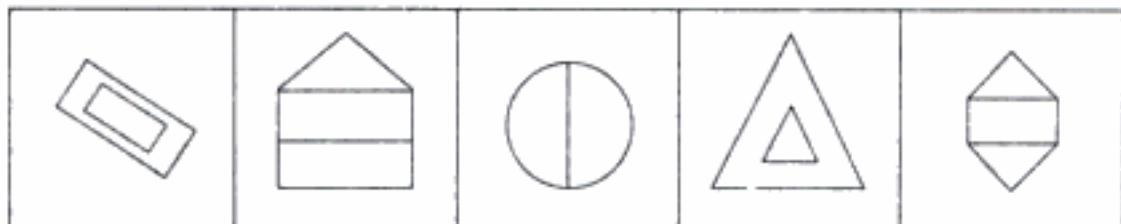
50. (C) Figure 3 should come after figure 4 to keep the shading levels in proper sequence.

TEST PAPER 2

Directions: Each question given below consists of a set of nine figures. Group the given figures into three appropriate classes using each figure only once.

1.

- (A) 3,5,2/1,4,6/7,8,9 (B) 3,4,1/5,7,9/2,8,6 (C) 1,4,9/3,6,8/2,5,7
 (D) 3,5,4/3,2,1/7,6,9



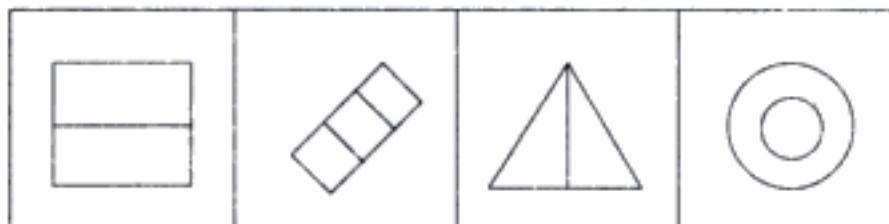
1

2

3

4

5



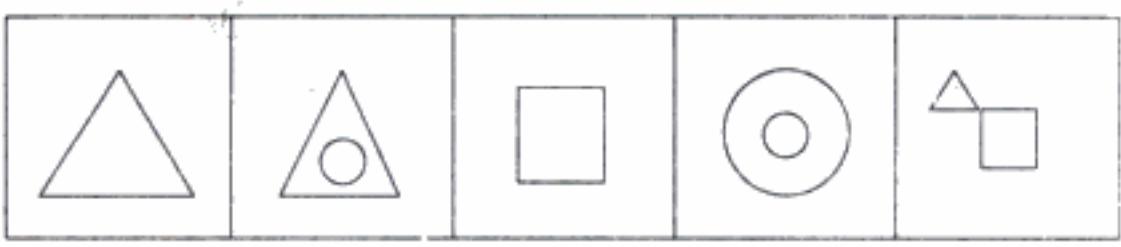
6

7

8

9

2.



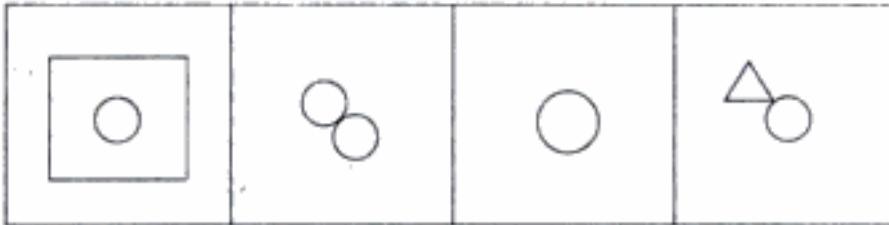
1

2

3

4

5



6

7

8

9

- (A) 4,7,9/2,5,8/1,3,6 (B) 1,3,8/2,4,6/5,7,9 (C) 1,4,6/2,3,7/5,8,9
 (D) 3,5,4/1,6,9/2,7,8

3.



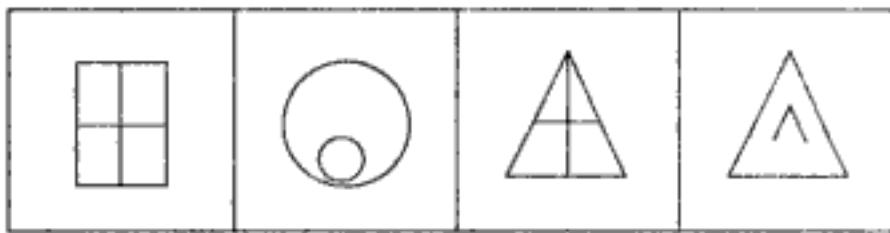
1

2

3

4

5



6

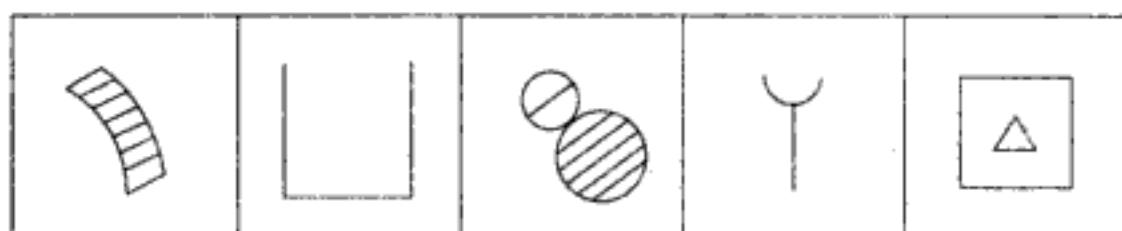
7

8

9

- (A) 2,4,7/1,3,5/6,8,9 (B) 1,5,7/2,3,9/4,6,8
 (C) 4,3,2/1,5,7/6,8,9 (D) 2,4,5/1,3,9/6,7,8

4.



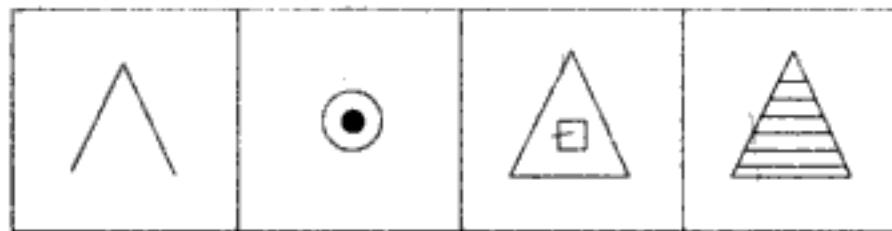
1

2

3

4

5



6

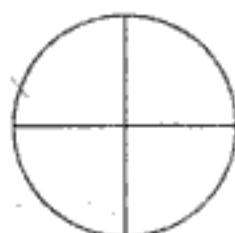
7

8

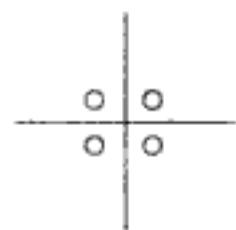
9

- (A) 1,3,4/7,8,9/5,6,2 (B) 1,3,5/2,4,7/6,8,9
 (C) 1,5,2/3,6,9/4,7 (D) 1,3,9/2,4,6/5,7,8

5. Which of the following figures, best completes the comparison?



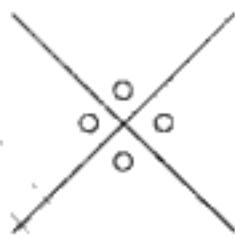
::



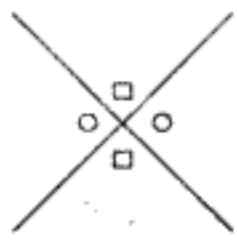
::



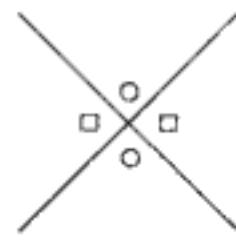
:: ?



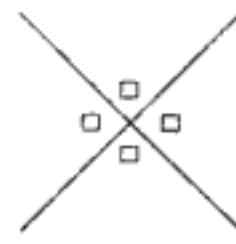
A



B



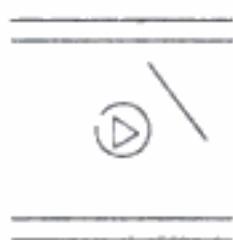
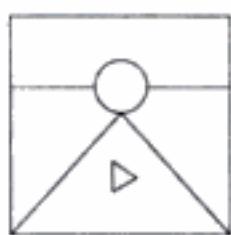
C



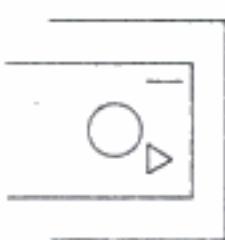
D

Direction: In the following questions a key figure is given. Find out which of the alternatives gives all the components needed to form the key figure.

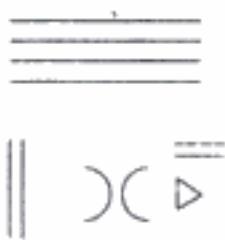
6. Key Figure



A



B

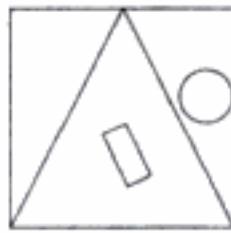


C



D

7. Key Figure



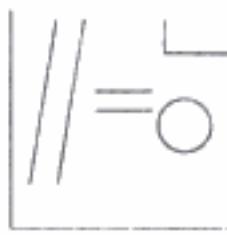
A



B

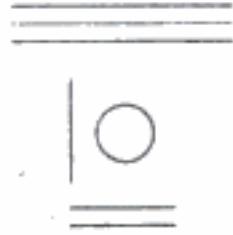
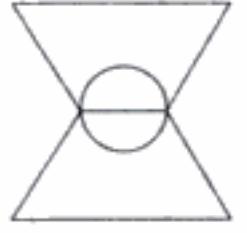


C

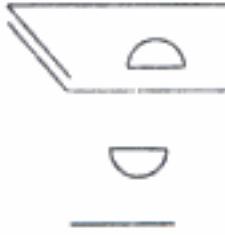


D

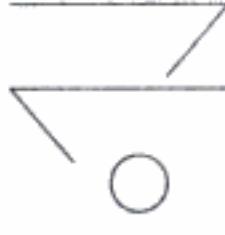
8. Key Figure



A



B



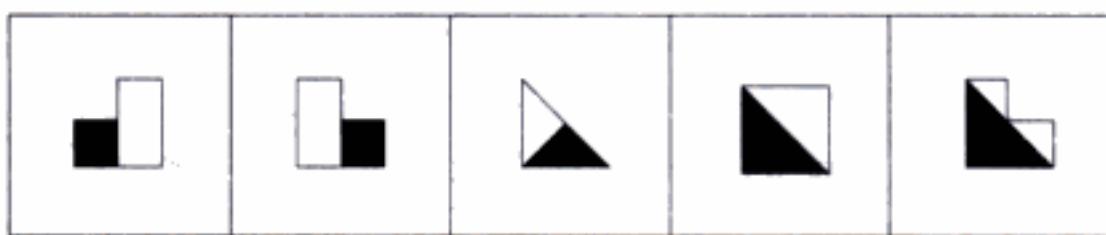
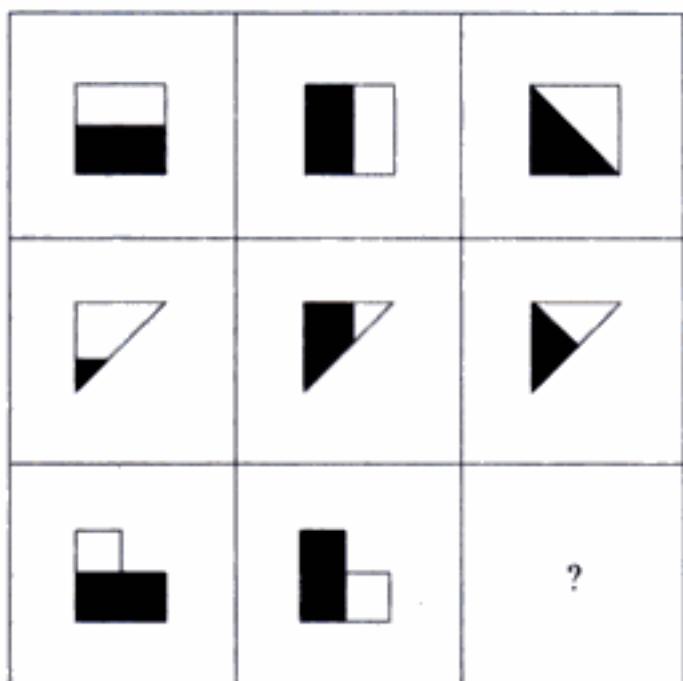
C



D

Directions: Find out from the answer figures, the figure that can fit into the empty space to complete the pattern.

9.



A

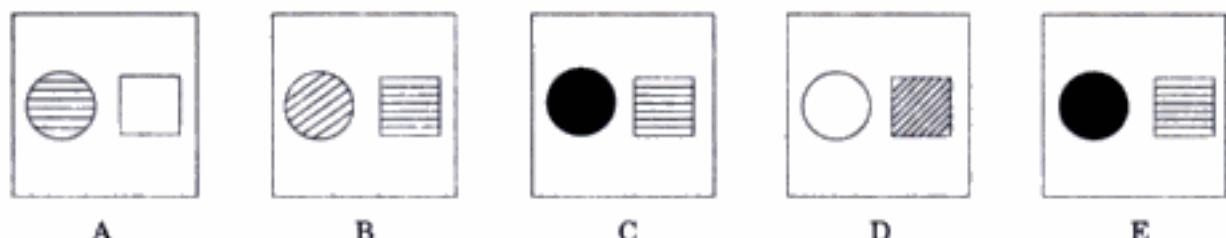
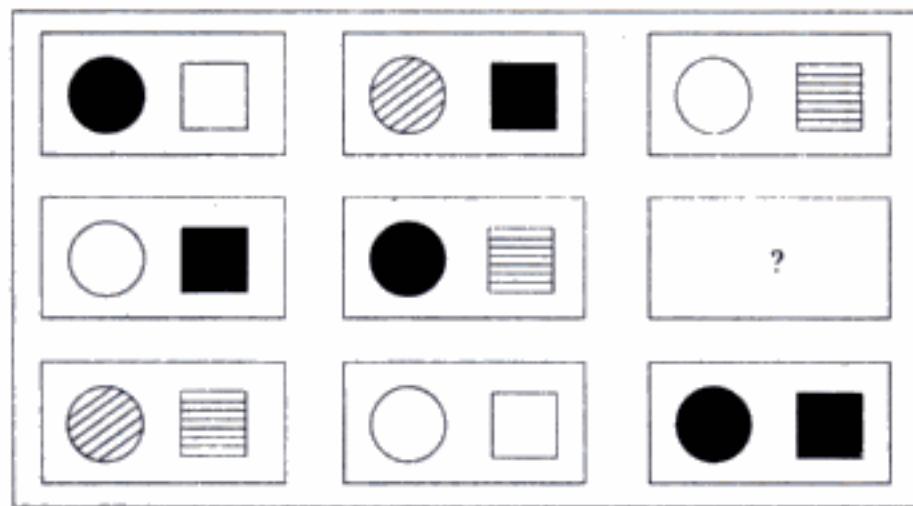
B

C

D

E

10.



A

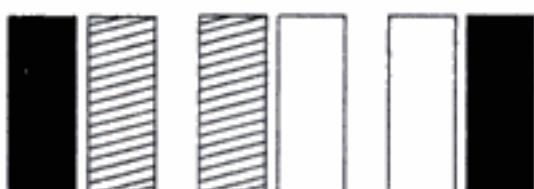
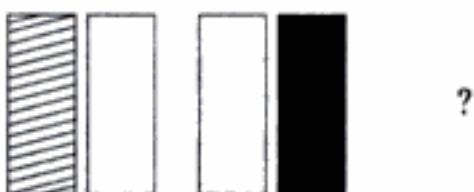
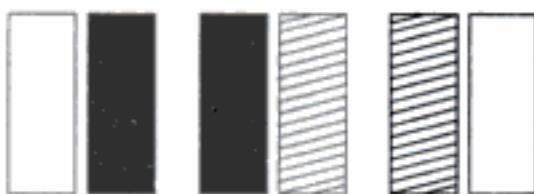
B

C

D

E

11.



A

B

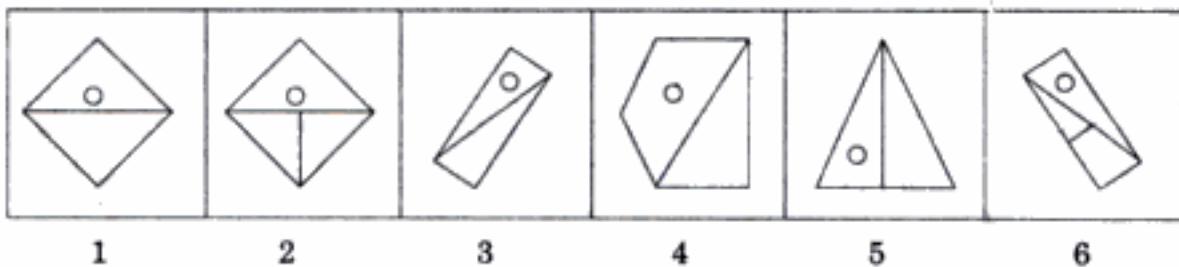
C

D

E

Directions: In the following questions, six figures are given. Four figures in each set have similar features whereas two are different. Select those two figures which have more or less identical features, but are different from those of the other four.

12.



1

2

3

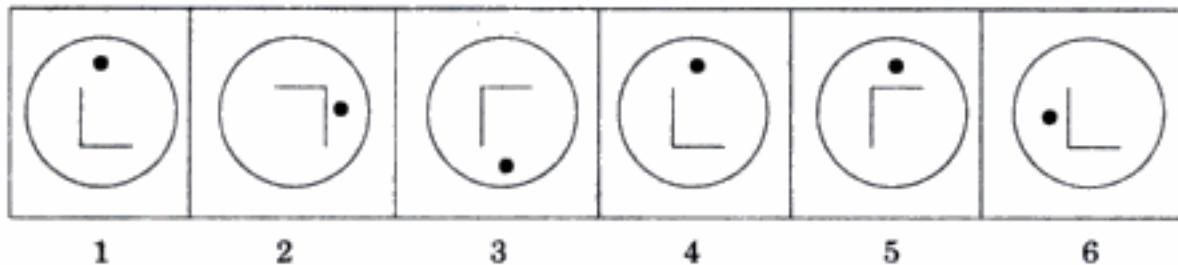
4

5

6

- (A) 1 and 3 (B) 4 and 6 (C) 2 and 6 (D) 2 and 5

13.



1

2

3

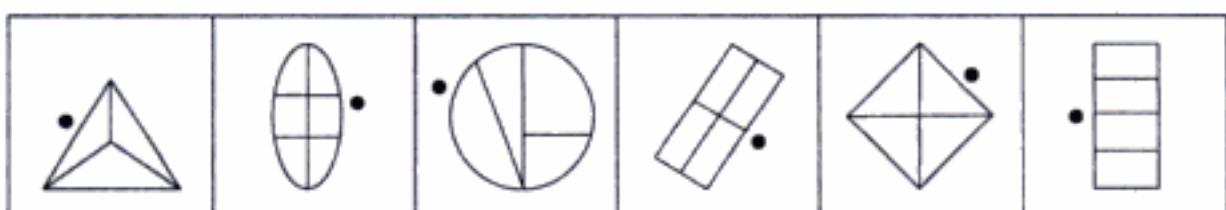
4

5

6

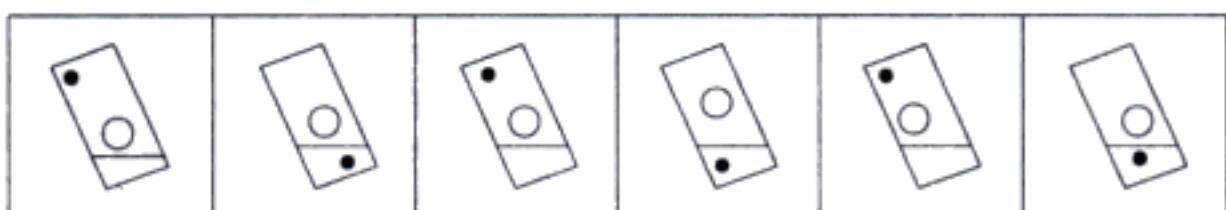
- (A) 2 and 4 (B) 1 and 6 (C) 4 and 6 (D) 4 and 5

14.



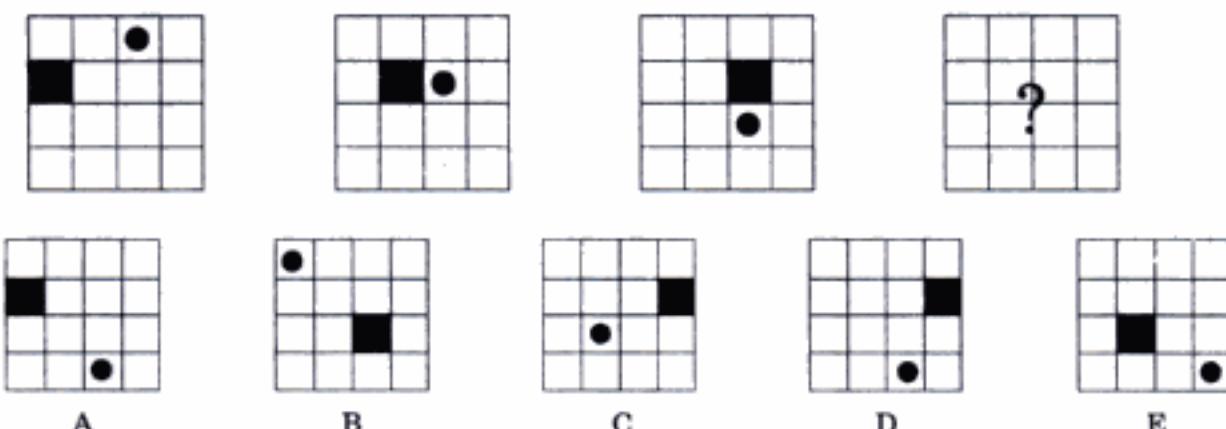
- (A) 1 and 4 (B) 1 and 3 (C) 3 and 5 (D) 2 and 3

15.

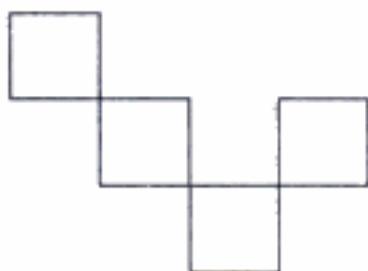


- (A) 1 and 3 (B) 3 and 5 (C) 3 and 6 (D) 4 and 6

16. In the following figure, one block is empty. Under it five answer figures, marked A-E are given. Select the figure that will come in the empty block.



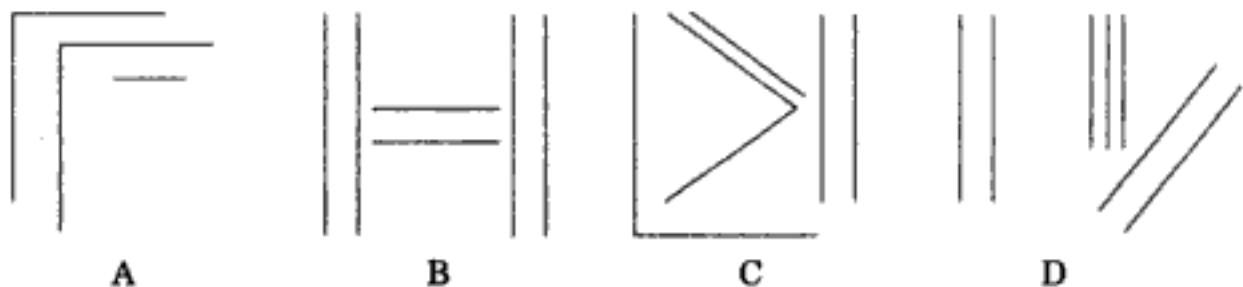
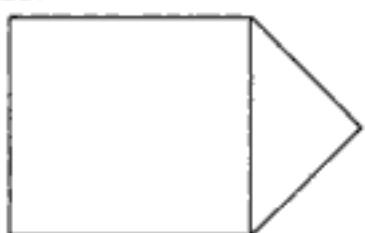
17. How many squares must be added to the following figure in order to make one large perfect square, retaining the given squares where they are in the given figure?



- (A) 14 (B) 8 (C) 12 (D) 14

Directions: Choose from the answer figures, the set of lines or arcs needed to draw the question figure given in the following questions.

18.



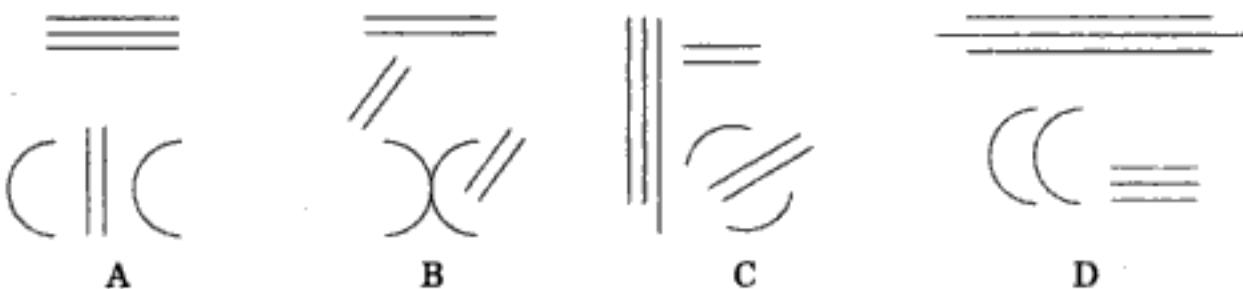
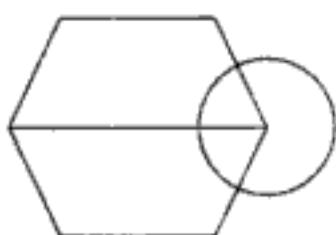
A

B

C

D

19.



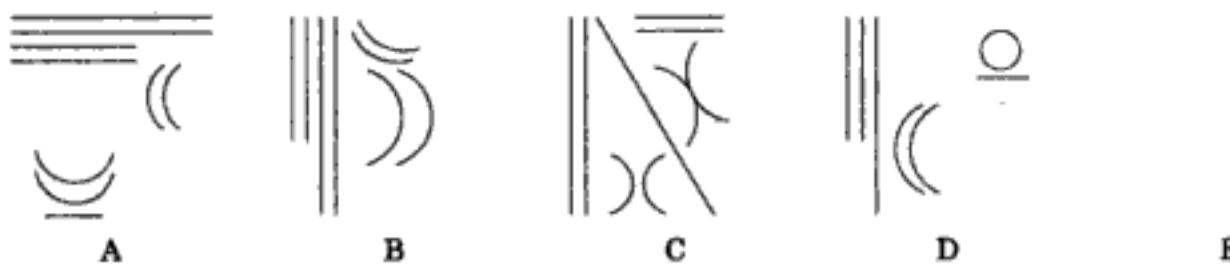
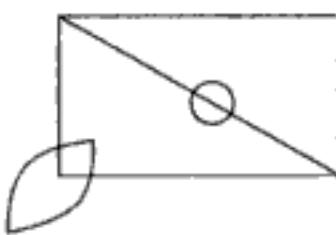
A

B

C

D

20.



A

B

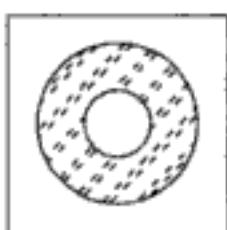
C

D

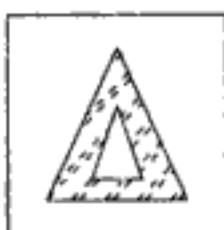
E

Directions: In each of the following sets of figures, select the one that is different from the rest.

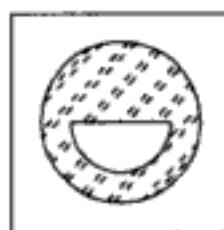
21.



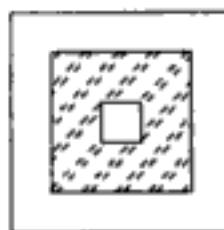
A



B

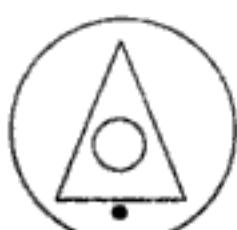


C



D

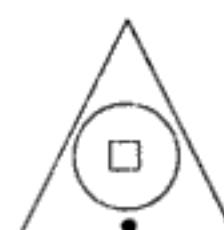
22.



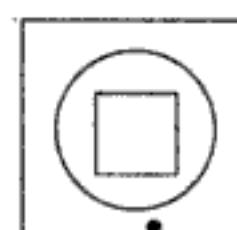
A



B

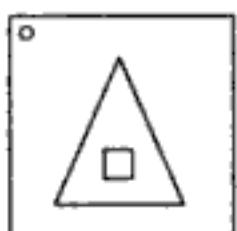


C



D

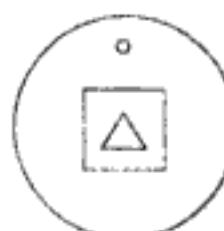
23.



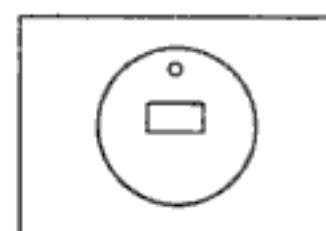
A



B



C

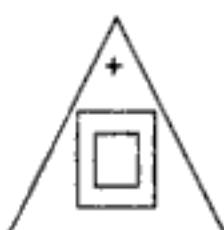


D

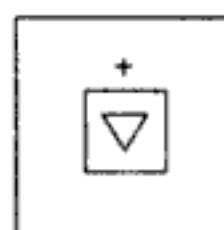
24.



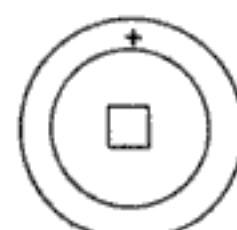
A



B

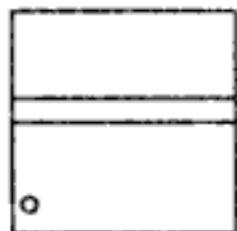


C

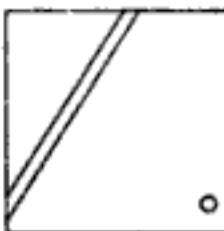


D

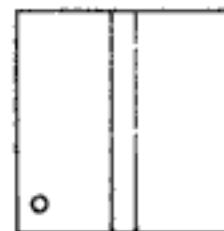
25.



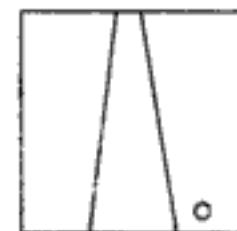
A



B

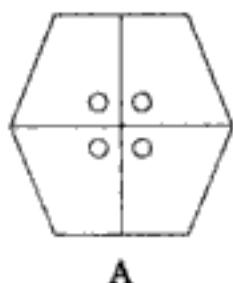


C

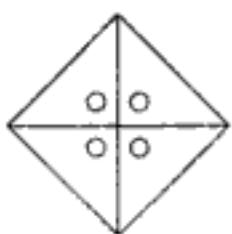


D

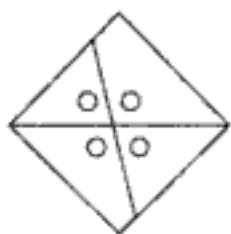
26.



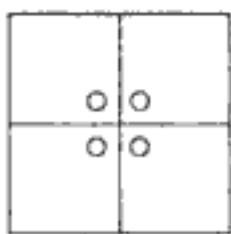
A



B



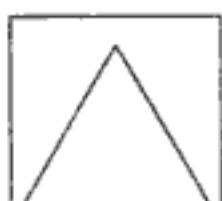
C



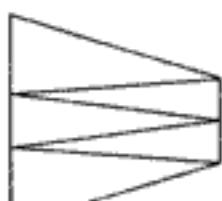
D

Directions: Select from the answer figures, the one which will fit the blank column in the following questions.

27.



1



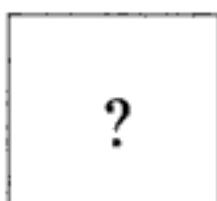
2



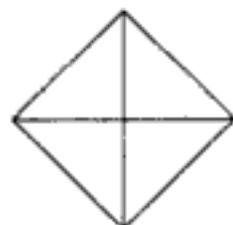
3



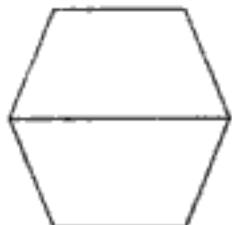
D



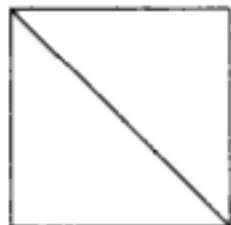
E



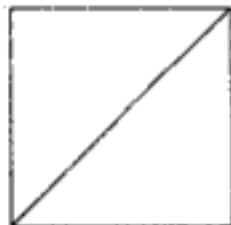
A



B

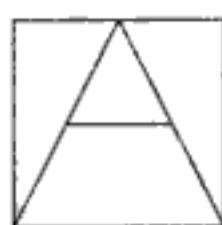


C



D

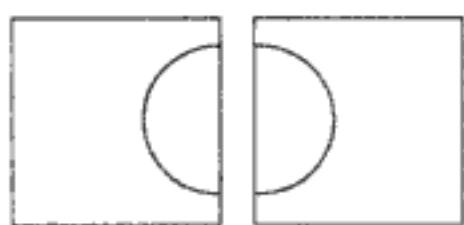
28.



1



2



3



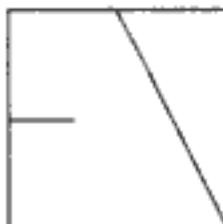
5



A



B

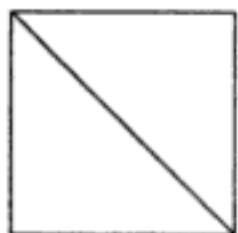


C

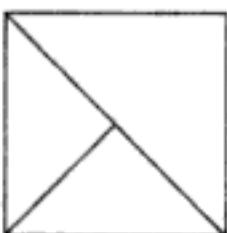


D

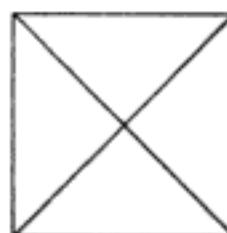
29. Which one of the following seven figures does not fit in the sequence.



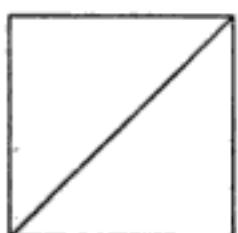
A



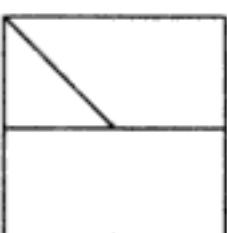
B



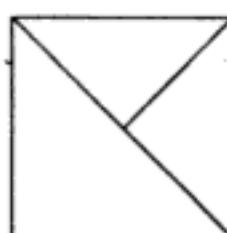
C



D



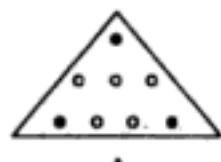
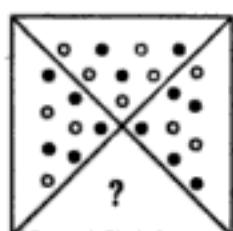
E



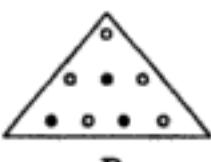
F

Directions: From the answer figures, choose the one that will fit in the empty space in the given figure to complete the pattern?

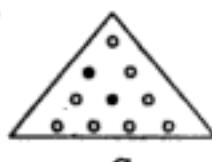
30.



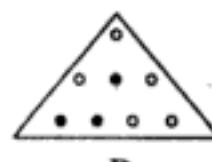
A



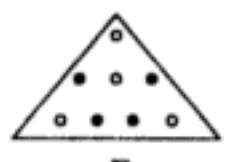
B



C

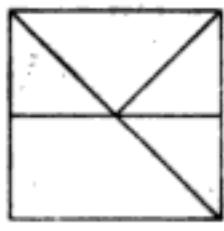
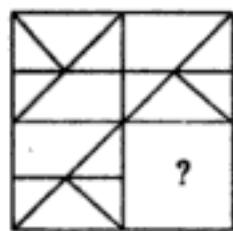


D



E

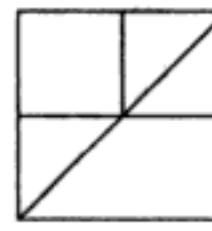
31.



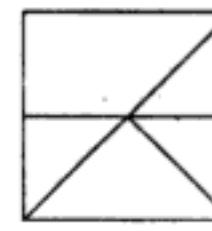
A



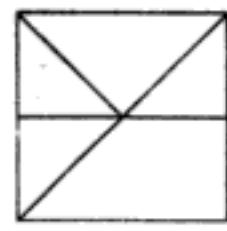
B



C

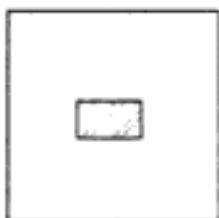
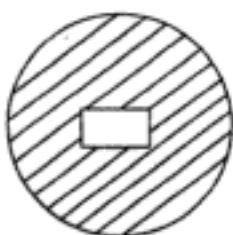


D

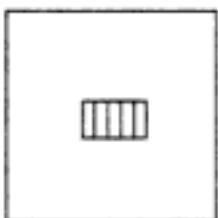


E

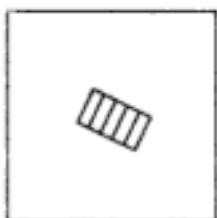
32.



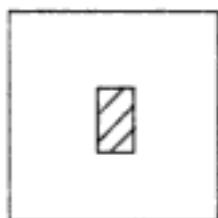
A



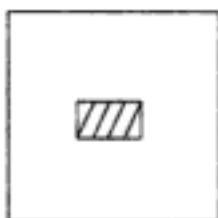
B



C

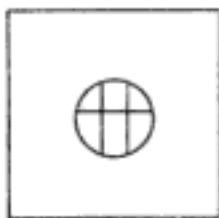
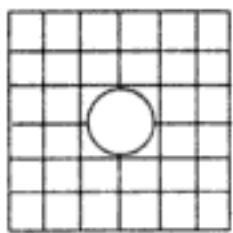


D

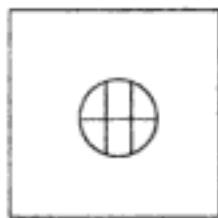


E

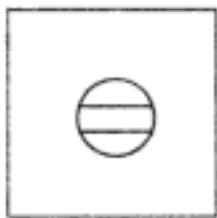
33.



A



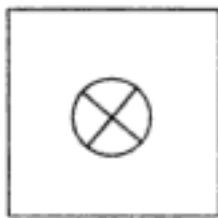
B



C

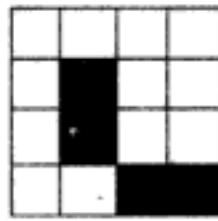
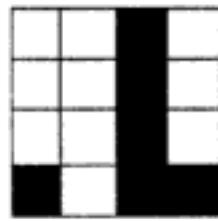
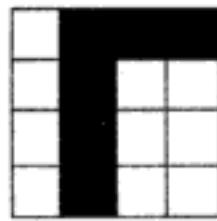
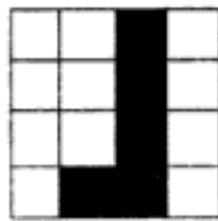
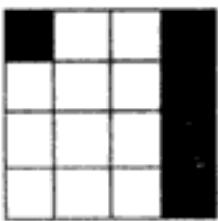
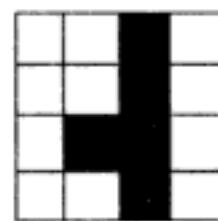
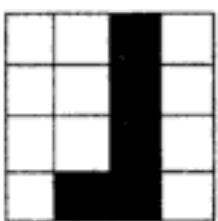
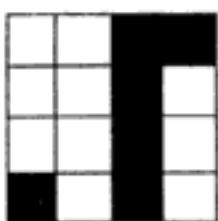


D

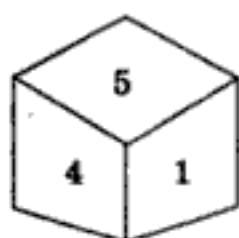


E

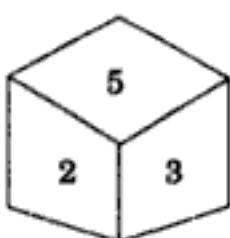
34. Select the figure that will fit in the blank square in the following series.



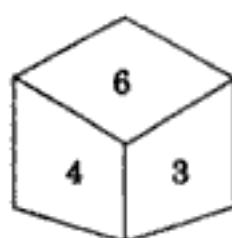
35. Four views of one cube are given below. Each of the six faces of cube is numbered. In Figure (ii) which number will be opposite to the face with the number 4?



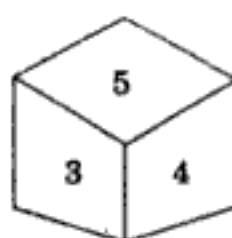
i



ii



iii



iv

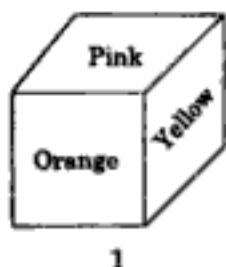
(A) 2

(B) 1

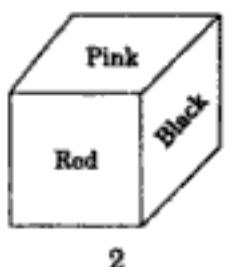
(C) 5

(D) 3

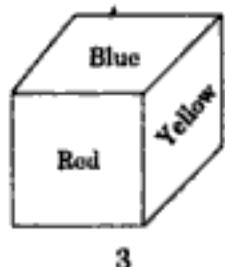
36. A block is painted yellow, red, black, orange, pink and blue on its six faces, as shown in the following views of the block. In Figure 3 which colour will be opposite to red?



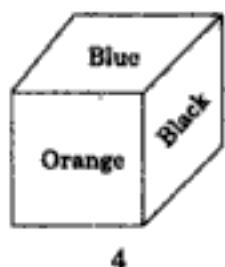
1



2



3



4

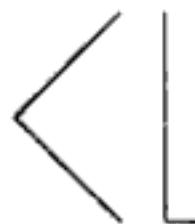
(A) Black

(B) Yellow

(C) Orange

(D) Pink

37. Which two of the following figures will form a perfect square?



1



2



3



4



5

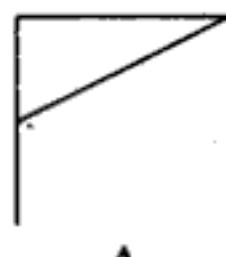
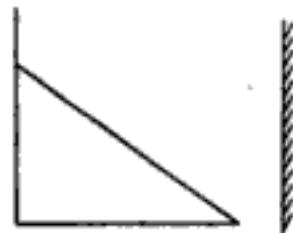


6

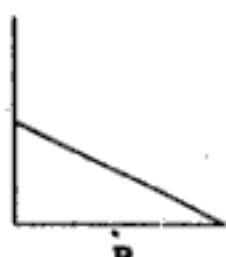
(A) 1 and 3 (B) 2 and 5 (C) 2 and 6 (D) 4 and 6

Directions: In the following questions, select the answer figure that represents the mirror image of the key figure.

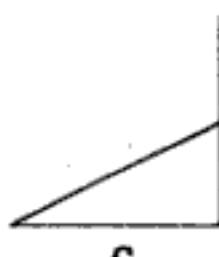
38. Key Figure



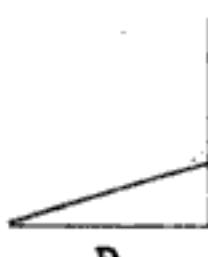
A



B

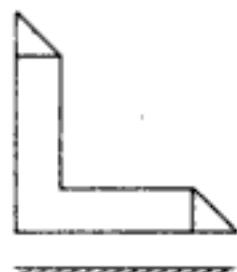


C



D

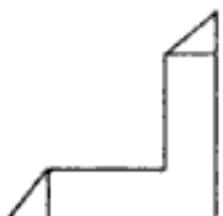
39.



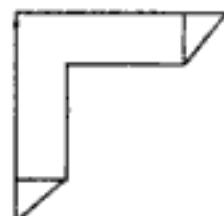
A



B



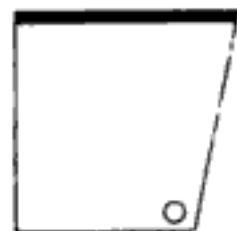
C



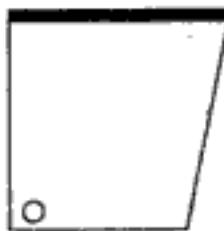
D

Directions: Imagine that the designs given in the following questions are on transparent sheets, with a heavy black line along one corner. In these questions one key figure is given followed by four answer figures. Select the answer figure that represents the shape of the key figure when it is first turned over and then turned upside down.

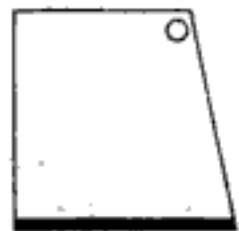
40.



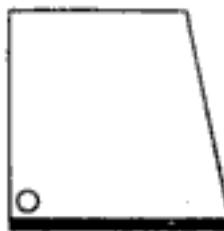
A



B

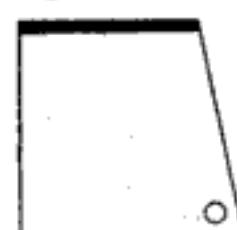
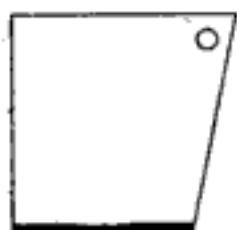


C

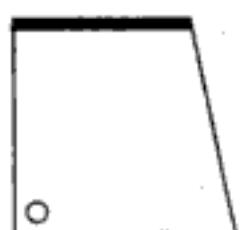


D

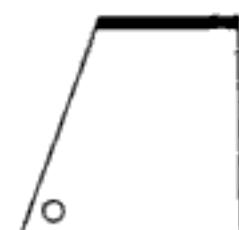
41.



A



B



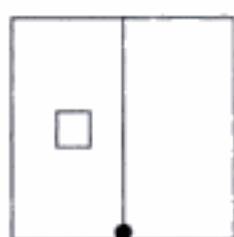
C



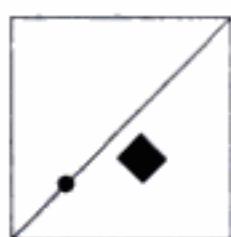
D

Directions: In each of the following questions, three figures are given followed by a blank column. Select the answer figure that will come next in the sequence.

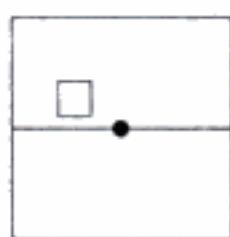
42.



1



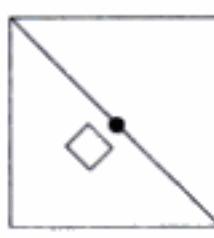
2



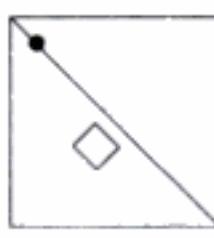
3



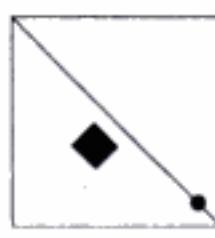
4



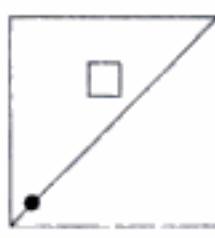
A



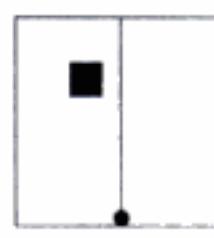
B



C

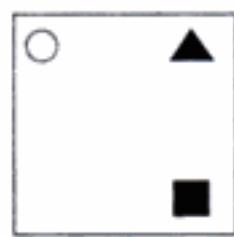


D

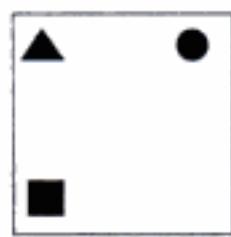


E

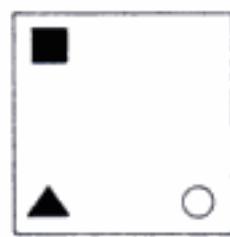
43.



1



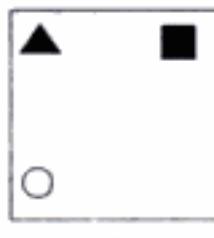
2



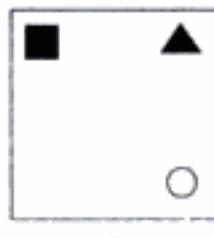
3



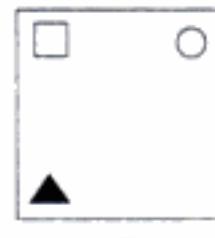
4



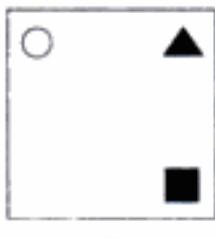
A



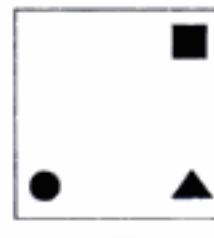
B



C

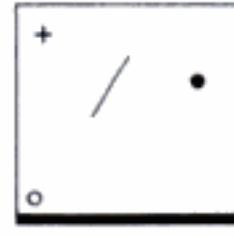


D

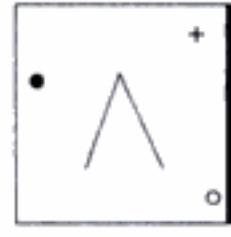


E

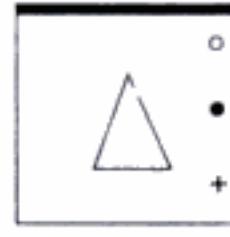
44.



1



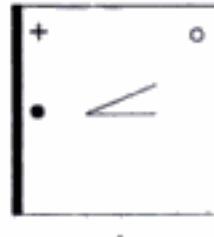
2



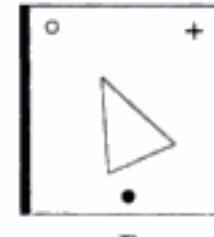
3



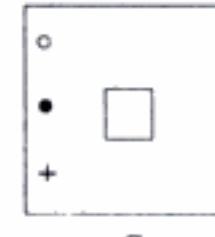
4



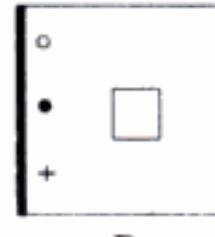
A



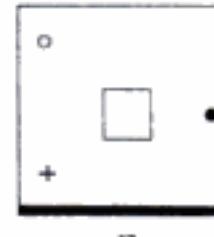
B



C

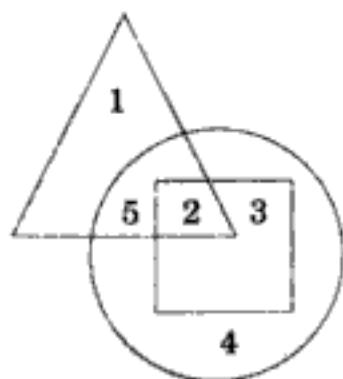


D

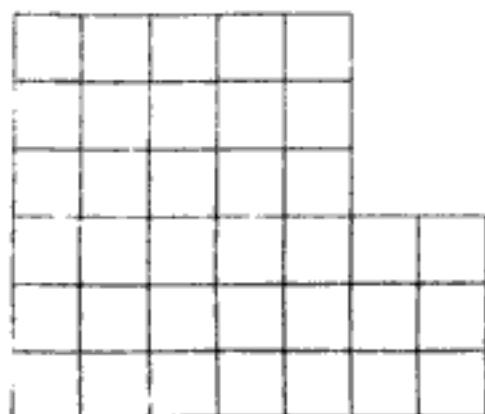


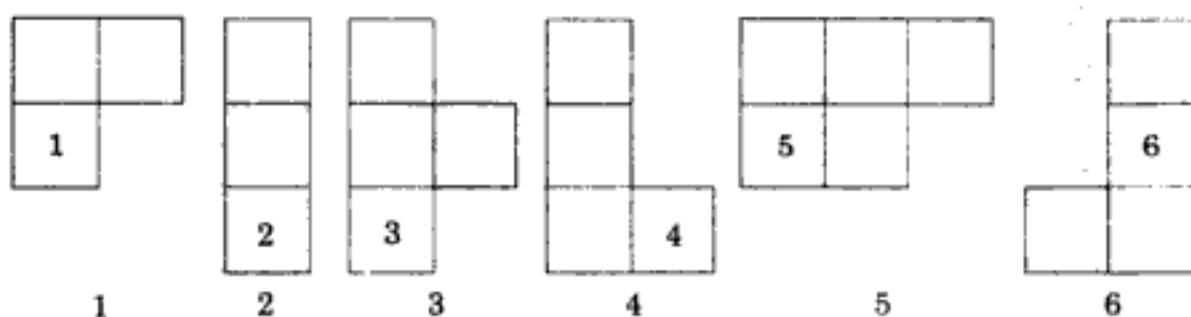
E

Directions: In the following diagram, the triangle represents businessmen, the square represents factory employees and the circle represents the population of educated people. Study the diagram and the numbers given therein, and answer the following questions.



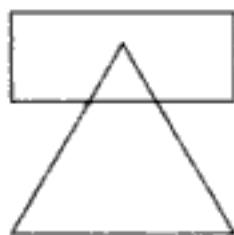
45. Which number represents educated factory workers?
- (A) 2 (B) 3 (C) 5 (D) 4
46. Which number represents educated businessmen.
- (A) 3 (B) 4 (C) 5 (D) 2
47. Which number in the diagram represents educated people not working in the factory?
- (A) 2 (B) 4 (C) 1 (D) 3
48. Which number in the above diagram indicates uneducated persons engaged in business?
- (A) 5 (B) 2 (C) 1 (D) 3
49. *Directions:* A sheet of square-lined paper is to be cut into a number of pieces without any wastage. The pieces obtained must only be cut along the lines of the squares drawn on the sheet. Subject to simple rules, which of the three pieces shown under the main diagram and marked 1, 2, 3, 4, 5 and 6, could be produced from it?



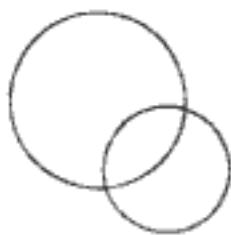


- (A) 1, 3 and 4(B) 2, 4 and 6(C) 1, 5 and 6(D) 1, 4 and 6

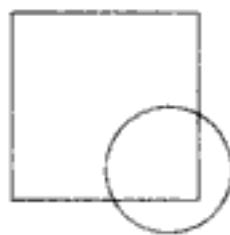
50. *Directions:* Which among the following two figures have identical features?



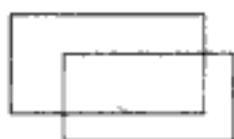
1



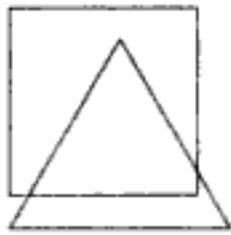
2



3



4



5



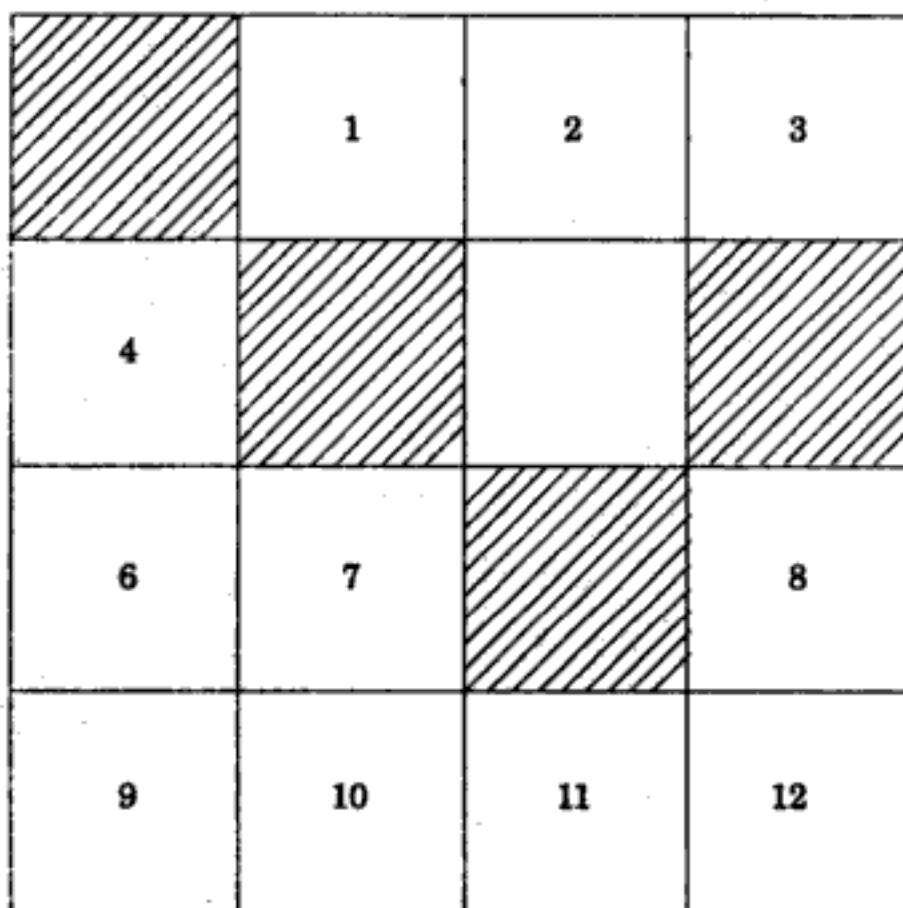
6

- (A) 1 and 3 (B) 3 and 4 (C) 4 and 5 (D) 2 and 4

Answers

1. (C) 1,4,9/3,6,8/2,5,7 2. (B) 1,3,8/2,4,6/5,7,9
3. (B) 1,5,7/2,3,9/4,6,8 4. (D) 1,3,9/2,4,6/5,7,8
5. (D) 6. (C)
7. (C) 8. (D)
9. (E) The second and third rows are cut from the figure directly above them in the first row.
10. (A) Each row has one shaded circle, one black circle, one lined circle, one lined square, one shaded square and one blank square.
11. (B) Each row has two shaded, two lined and two blank vertical blocks.
12. (C) 2 and 6. Other figures divide in two parts only whereas 2, and 6 divide in three parts.
13. (C) 4 and 6. The black dot moves clockwise around the circle. In Figures 4 and 6, their positions are wrong and do not match the pattern.

14. (D) 2 and 3. All figures are divided into parts. The number of columns is equal to the number of lines in the figures.
15. (D) 4 and 6. Movement of the black dot is clockwise from one corner to another. In figures 4 and 6 the positions are different.
16. (D) The square moves one position in the horizontal direction each time; the black dot moves one position in the vertical direction each time.



17. (C) 12 The following diagram will clarify the answer.
18. (B) 19. (C)
20. (C) It cannot be A because diagonal line has to be longest.
21. (C) All others have similar figures inside as well as outside.
22. (C) In all others, the outer and inner figures are the same.
23. (C) In all others, the outer and inner figures are the same.
24. (B) In all others, the first two outer figures are same.
25. (D) All others have parallel lines inside.
26. (C) All others are divided into equal-sized portions.
27. (D) The figures contain the letters V, W, X, Y and Z.
28. (C) The figures contain the letters A, B, C, D, and E.
29. (E) In all others, the lines cut the square diagonally.

30. (B) Note the arrangement of black dots and small circles.
31. (D) There should be a diagonal from the right side of the angle.
32. (D) Count the number of lines that should cross, and also note their directions.
33. (D) Same as above.
34. (D) The top right-hand square moves diagonally, the bottom left-hand square moves horizontally.
35. (A) 2 36. (C) Orange 37. (C) 2 and 6 38. (C)
39. (D) 40. (B) 41. (A)
42. (C) The central lines moves by 45° . The circles moves along the line, a quarter each time. The square moves sides and changes colour each time.
43. (E) The circle and square move clockwise, the circle changing colour each time. The triangle moves anticlockwise.
44. (D) The plus sign (+) moves clockwise, the small circle moves anticlockwise. The number of lines in the centre of the main figure increases each time. The thick border on one side moves in an anticlockwise direction.
45. (B) 3 46. (C) 5 47. (B) 4 48. (C) 1
49. (D) 1,4 and 6 50. (D) 2 and 4.

TEST PAPER 3

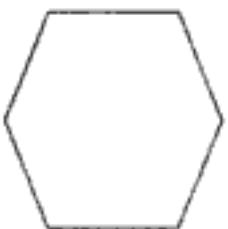
1. Which of the four answer figures, A, B, C and D makes the best comparison.



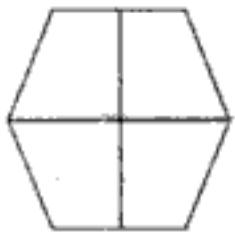
is to



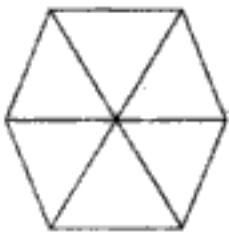
as



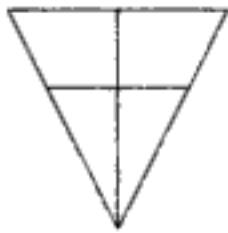
is to ?



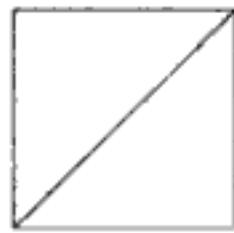
A



B



C

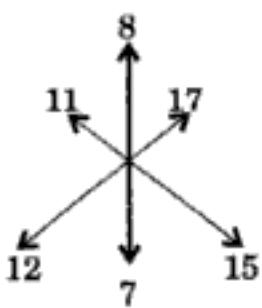


D

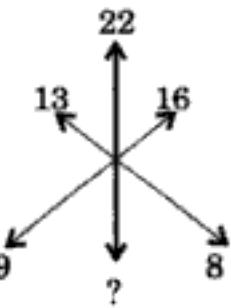
2. Which of the following is least like the other four letters?



3. Find the missing number in the following design.

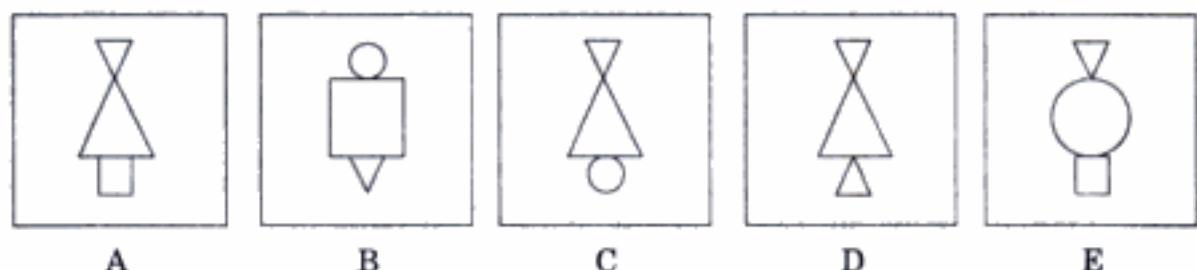
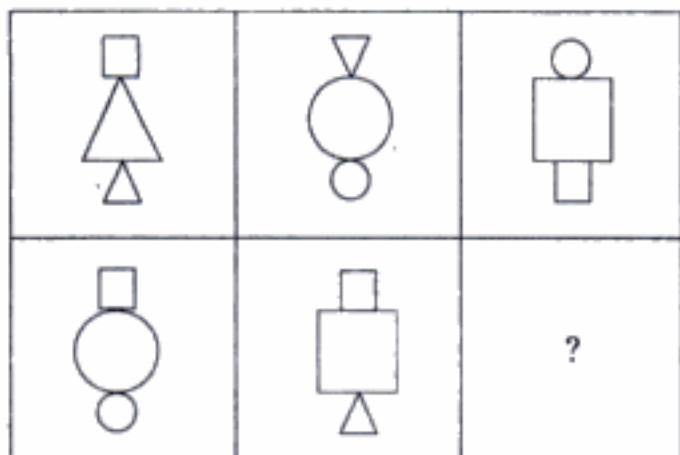


- (A) 14 (B) 11 (C) 10 (D) 12

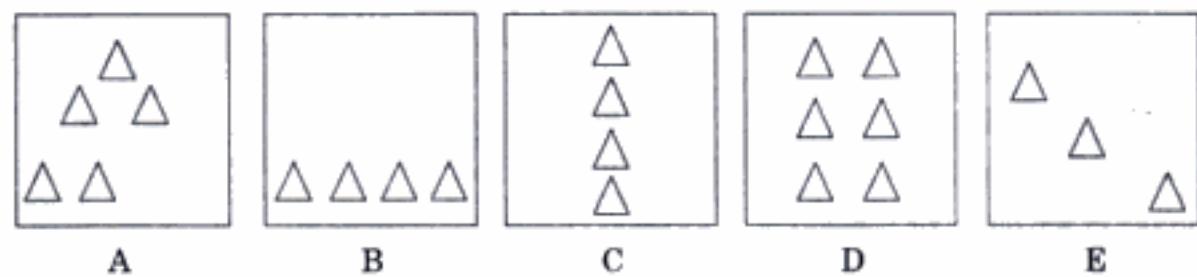
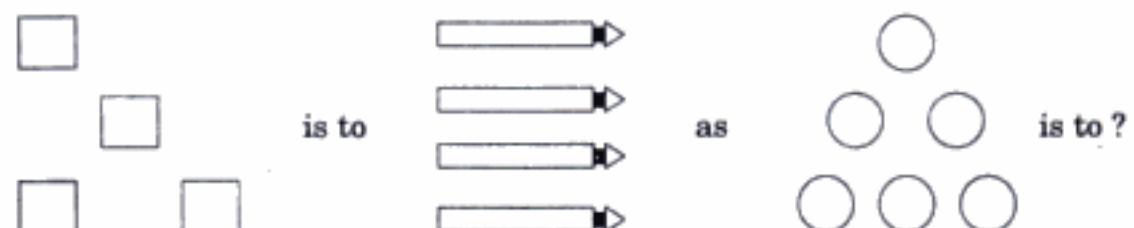


4. Which of the answer figures, completes the sequence to replace the empty block in the following figure?



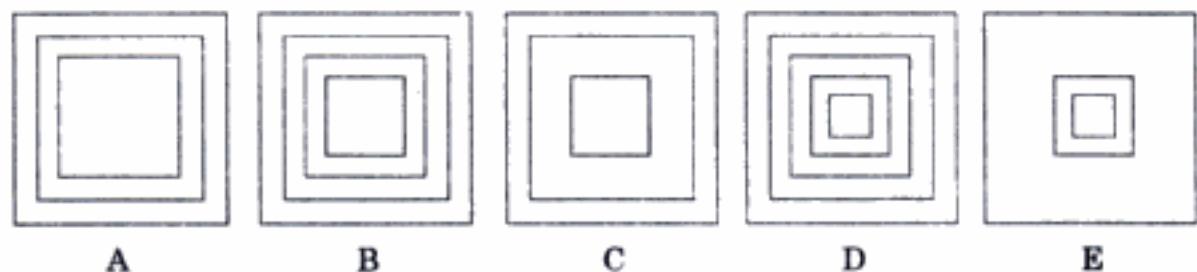


5. Which of the five answer designs best completes the comparison?

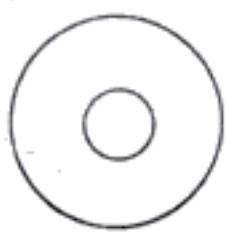


Directions: In each of the following questions, five designs are given. You have to select the design that is least like the other four designs.

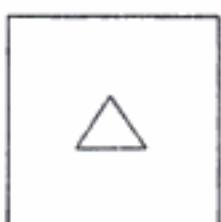
6.



7.



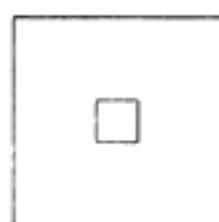
A



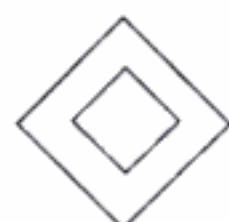
B



C

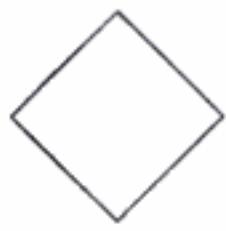


D

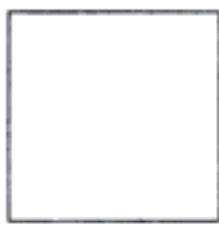


E

8.



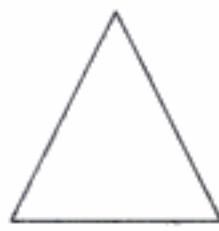
A



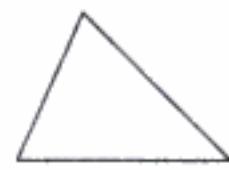
B



C



D



E

Directions: In the following questions, select the answer figure that completes the sequence given in the set of question figures below.

9.



is to



as

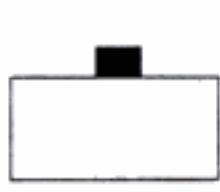


is to ?

Answer Figures



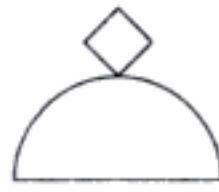
A



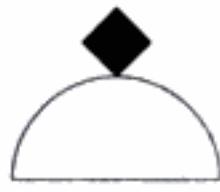
B



C

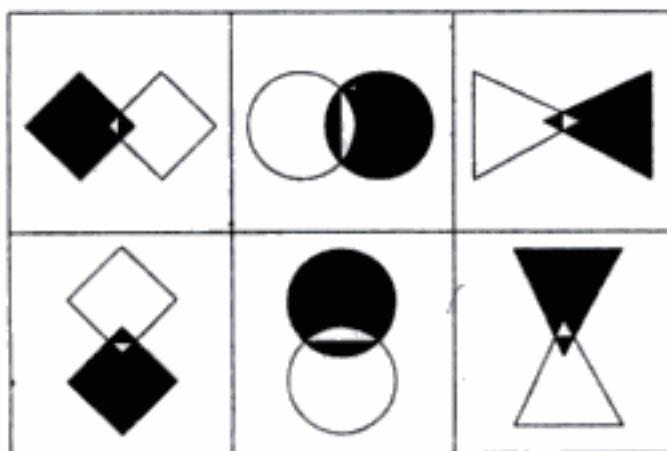


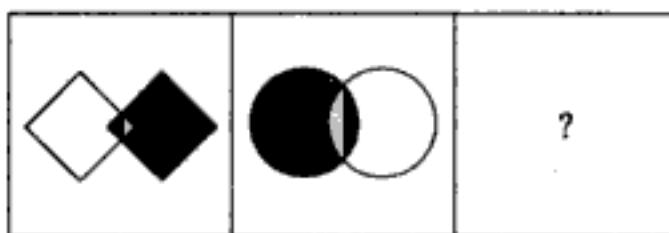
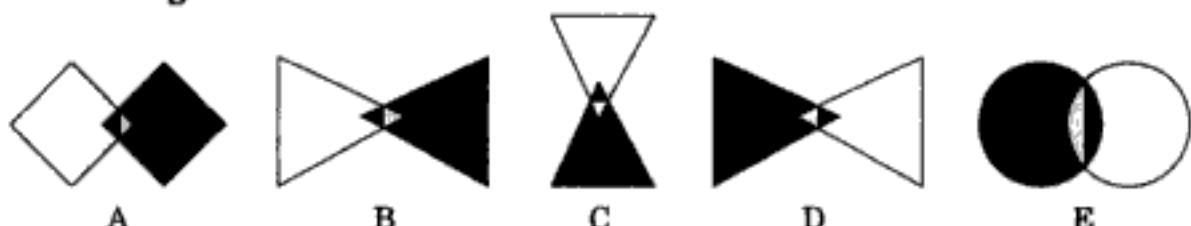
D



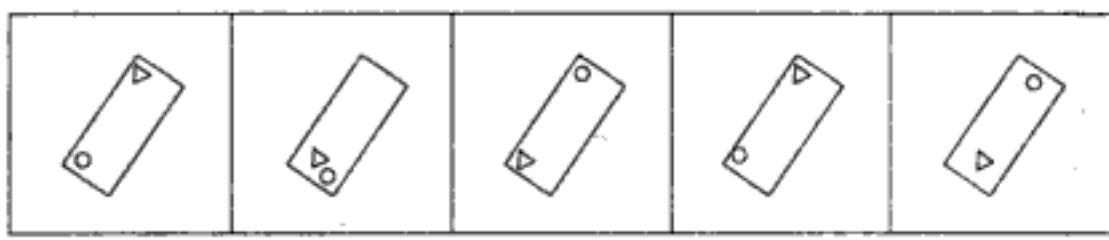
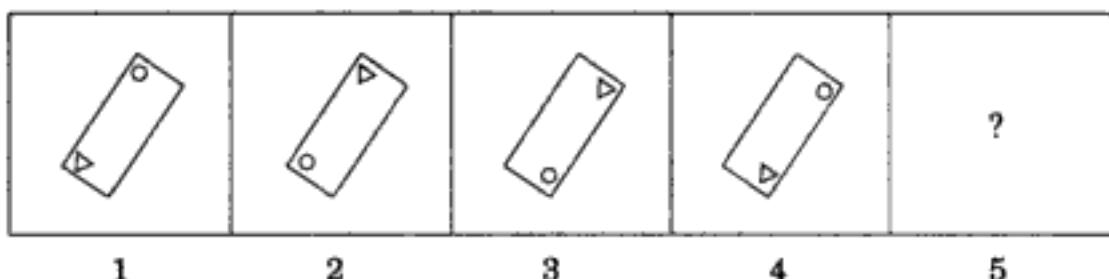
E

10.

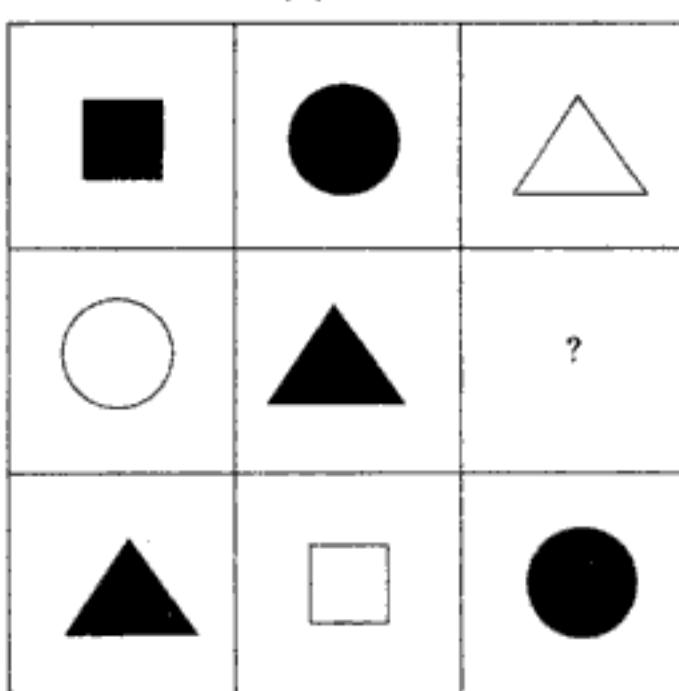


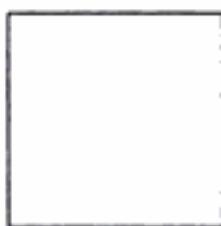
**Answer Figures**

11. Which answer figure will come in the blank column?



12. Which figure from the answer choices will come in place of the question mark in row (B) ?

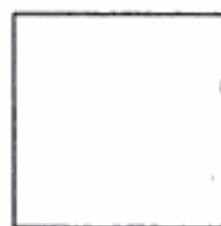




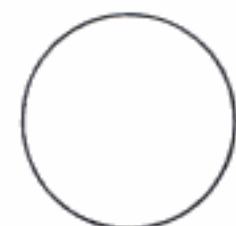
A



B



C

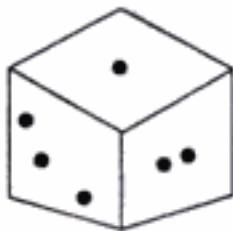


D

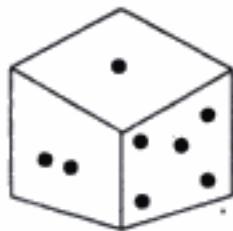


E

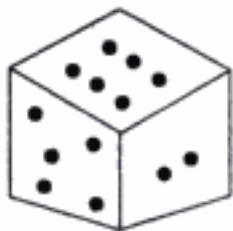
13. In the following figures, four different views of a cube or die are given as viewed from different angles. Find the number of dots on the face opposite to the face with one dot.



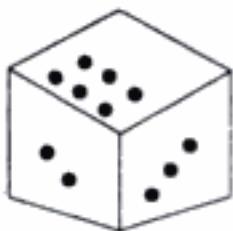
i



ii



iii



iv

(A) 6

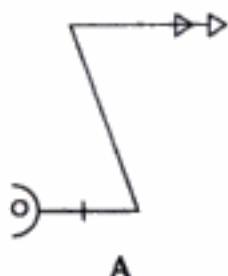
(B) 3

(C) 2

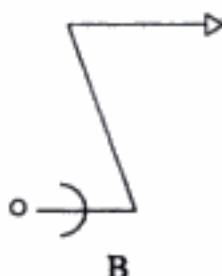
(D) 4

Directions: In the following questions, find the design which does not follow a particular series?

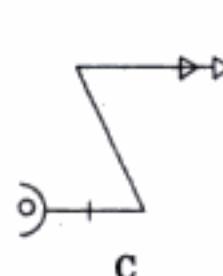
- 14.



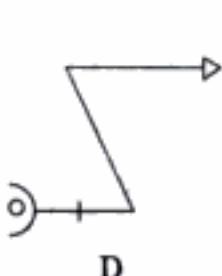
A



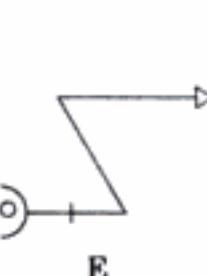
B



C

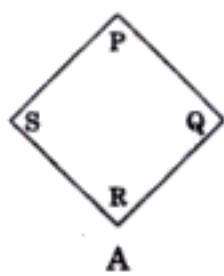


D

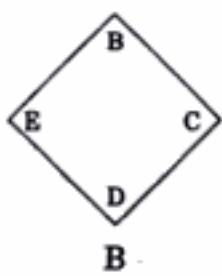


E

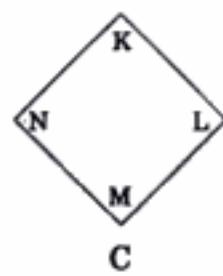
- 15.



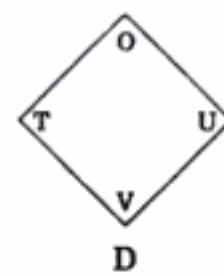
A



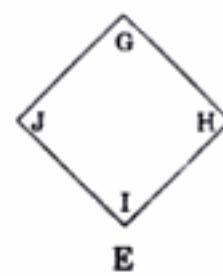
B



C

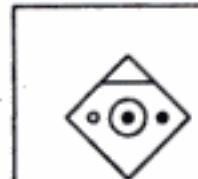


D



E

- 16.



A



B



C

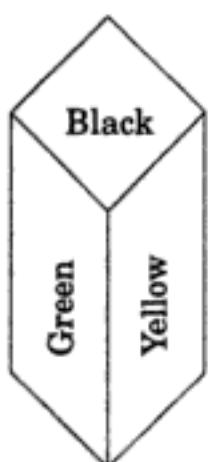


D

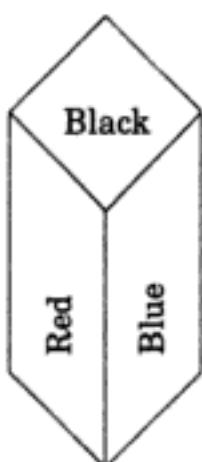


E

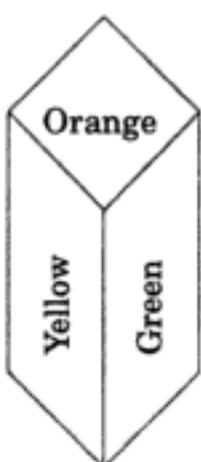
- 17.** *Directions:* Observe carefully the various views of the block. Each face of the block is painted red, orange, blue, yellow, black and green. Which colour will be on the empty face in figure 5?



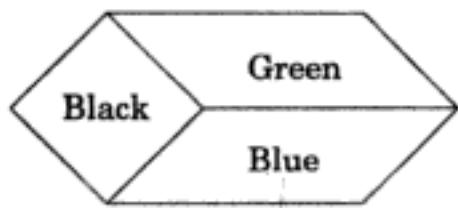
1



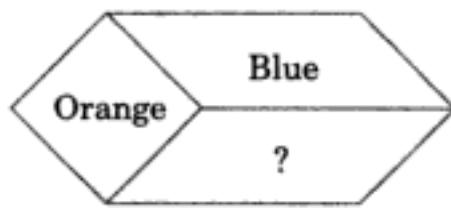
2



3



4

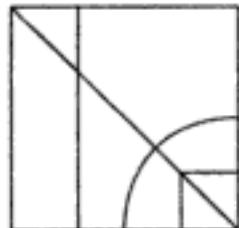
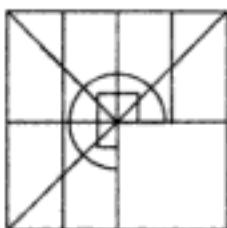


5

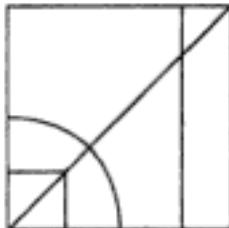
- (A) Red (B) Green (C) Yellow (D) None of these

Directions: Select the answer figures that will complete the missing portion in the following key figure.

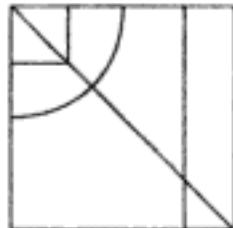
- 18. Key Figure**



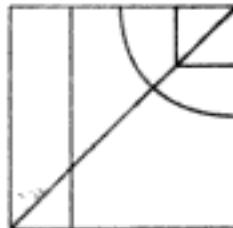
A



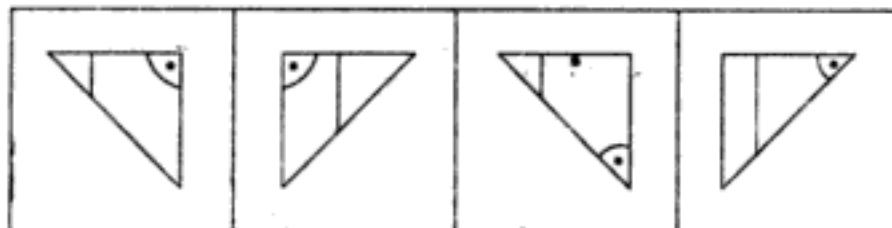
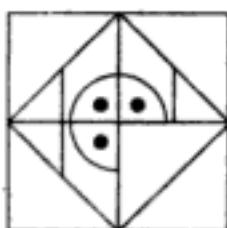
B



C



D

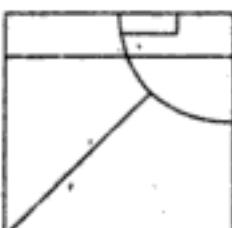
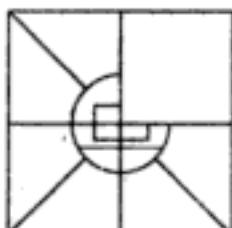
19. Key Figure

A

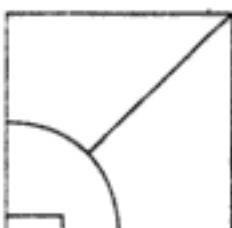
B

C

D

20. Key Figure

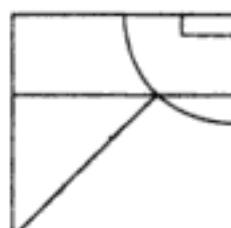
A



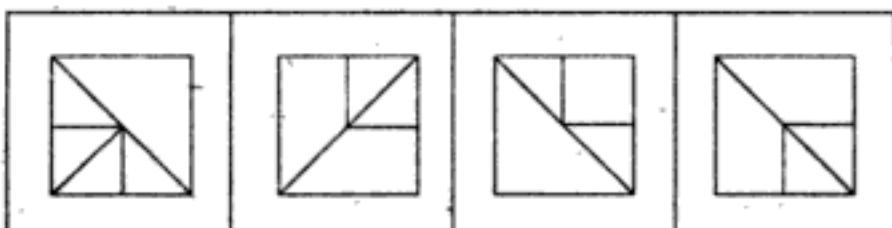
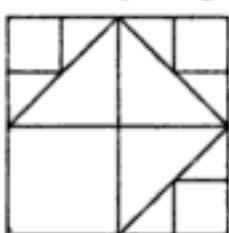
B



C



D

21. Key Figure

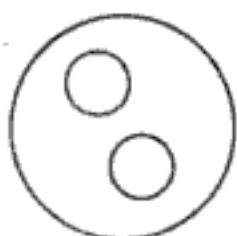
A

B

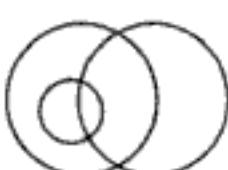
C

D

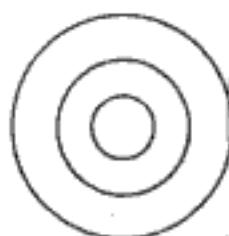
Directions: Questions 22 to 31 are based on the following diagrams, marked A, B, C, D, E and F. Each diagram represents various types of relationships. Select the diagram that best represents the relationship between the various items or classes of people, mentioned in the questions.



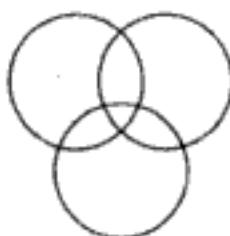
A



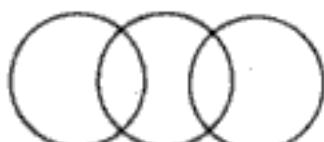
B



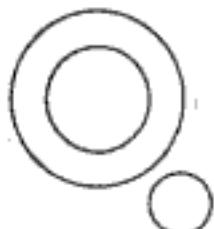
C



D



E

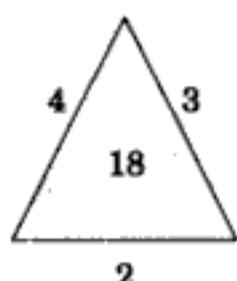


F

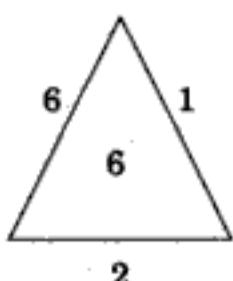
22. Water bodies, ocean, Atlantic Ocean
23. Aerated waters, Limca, Pepsi Cola
24. Principal, school staff, teachers
25. Married people, doctors, surgeons
26. Personnel manager, chief engineer, electrical engineer
27. Illiterates, poor people, unemployed
28. Lawyers, smokers, non-smokers
29. Mankind, surgeons, goat
30. Living creatures, parrots, birds
31. Milk, fruits, eatables

Directions: Insert the missing numbers

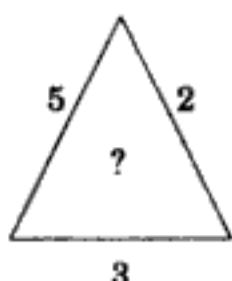
32.



(A) 13



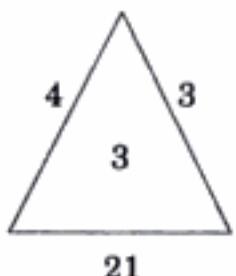
(B) 17



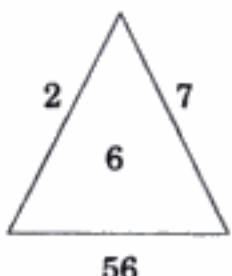
(C) 24

(D) 30

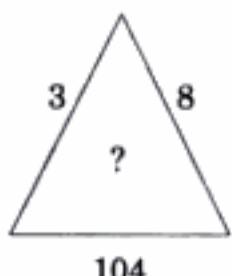
33.



(A) 8



(B) 12

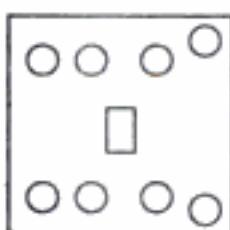
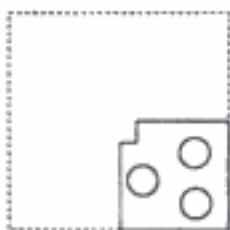


(C) 10

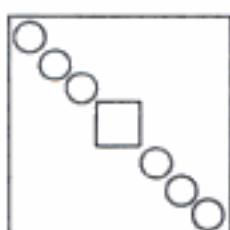
(D) 15

Directions: In the following questions, a piece of square paper is folded as shown below and cuts are made as marked. How would the paper look like when unfolded.

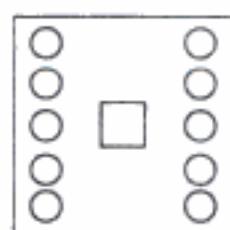
34.



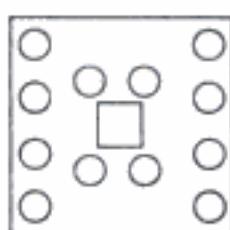
A



B

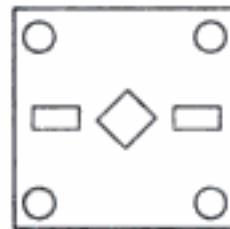
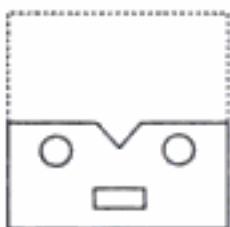


C

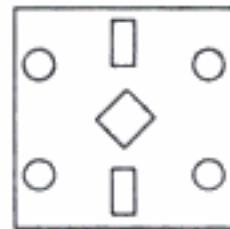


D

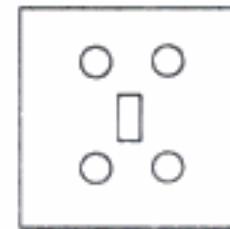
35.



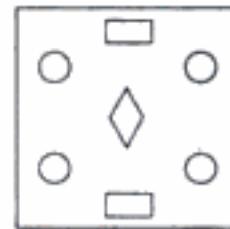
A



B



C

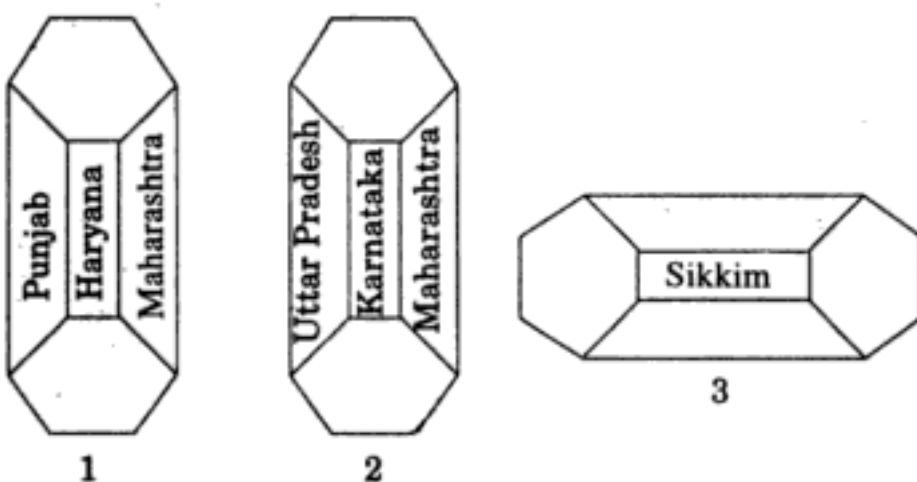


D

36. Find the word which can have any of the letters on the letter as prefixes.

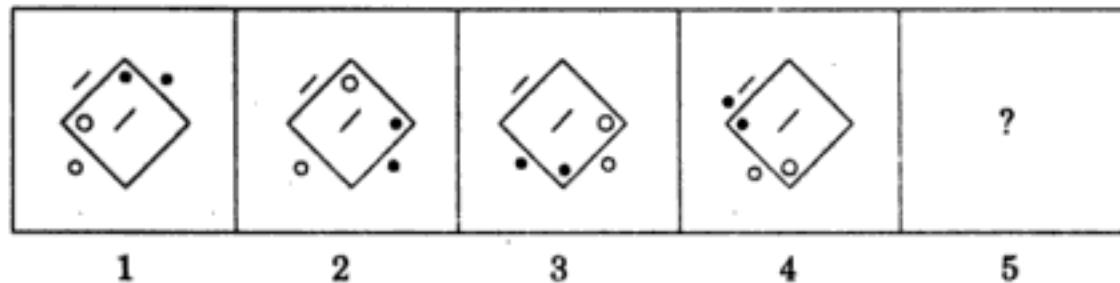
TR
D
L
M
N
R
SPL

37. *Directions:* In the following figures, numbered 1, 2 and 3, two horizontal and one vertical view of a six-sided block are given. On each face of the block, names of six states Maharashtra, Uttar Pradesh, Karnataka, Sikkim, Punjab and Haryana are written.

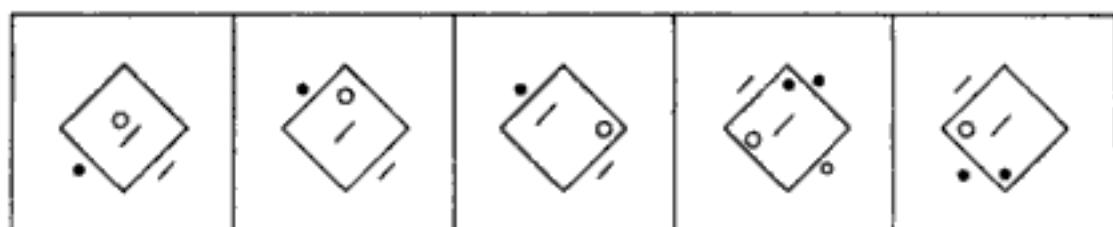


If the block is turned to a lateral position as shown in figure 3, which two states will be adjacent to Sikkim?

38. Directions: In the following question, four designs are given, that follow a certain sequence or pattern. Find the next figure in the sequence from the answer choices provided below.



Answer Figures



A

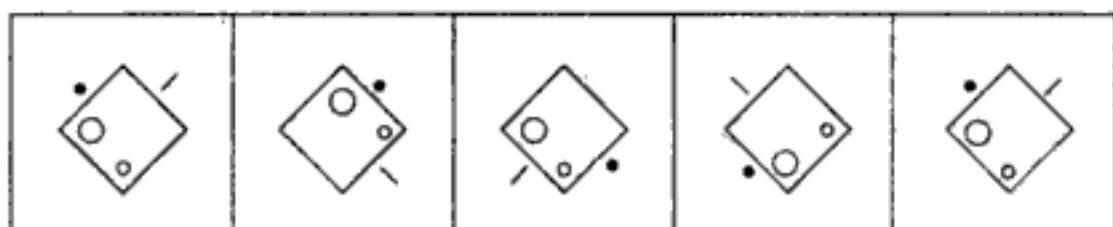
B

6

10

E

- 39. Directions:** In the following question, five designs are given. Four of them follow a certain pattern and one is different (odd). Find the odd one out.



A

R

6

11

E

Directions: Which of the following is different from the other four?

Directions: Find the missing number in the following questions.

43. 3, 9, 15, 21 ?
(A) 25 (B) 26 (C) 27 (D) 30 (E) 31

44. Which number will come in the empty block below?

5	11	6
9	16	7
8	?	4

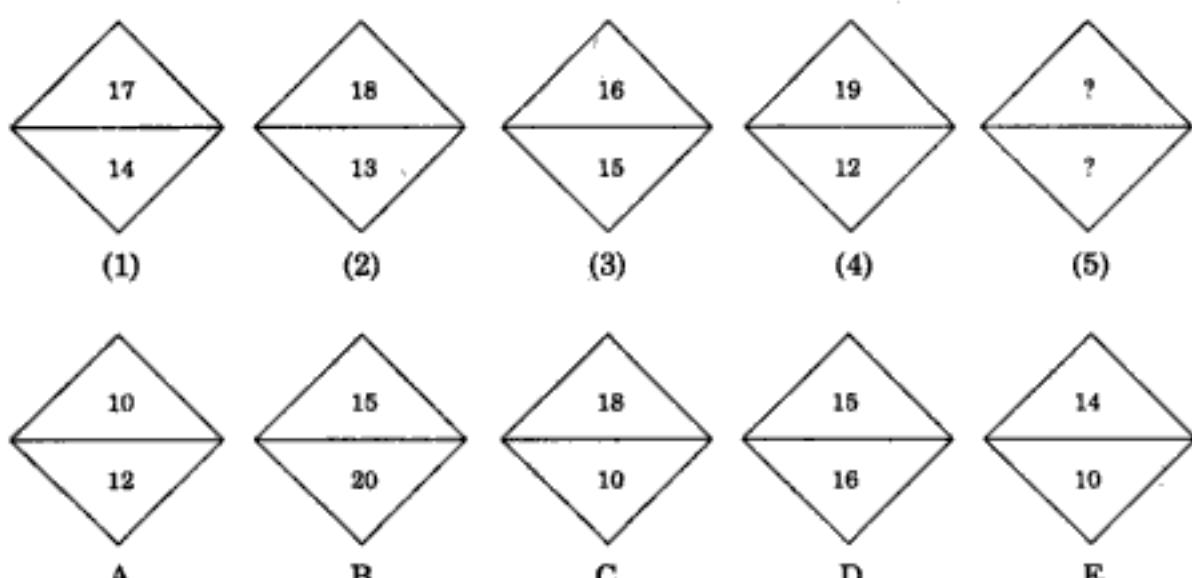
- (A) 6 (B) 10 (C) 12 (D) 15 (E) 16

45. Which number will replace the question mark?

1	6	5
7	8	1
4	7	?

- (A) 5 (B) 3 (C) 6 (D) 4 (E) 2

46. Find the missing numbers in the following set of figures.



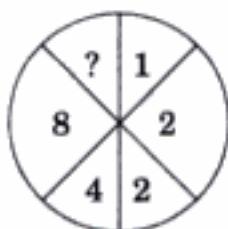
47. Which number will come in the blank column below?

4	3	2	5

9	5	3	11
11	7	5	?

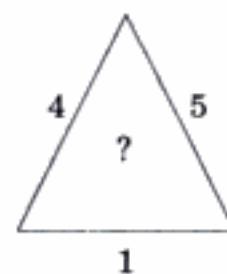
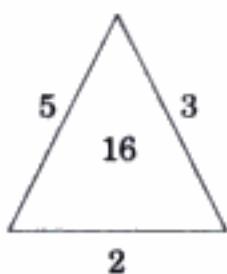
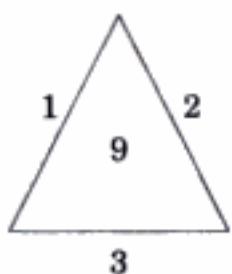
- (A) 8 (B) 7 (C) 13 (D) 15 (E) 16

48. Select an appropriate number from the answer choices to replace the question mark.



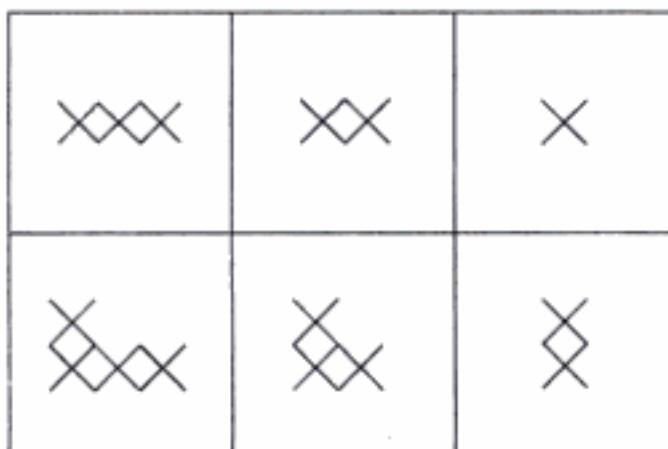
- (A) 10 (B) 16 (C) 32 (D) 40 (E) 41

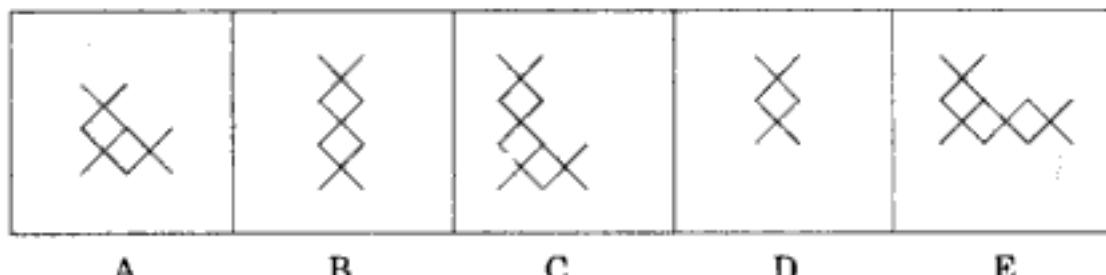
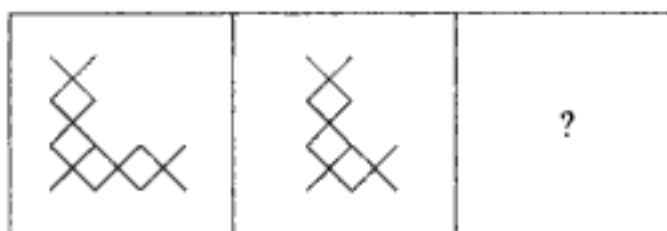
49. Fill the missing number in the last triangle.



- (A) 7 (B) 8 (C) 9 (D) 10 (E) 12

50. Which figure will replace the question mark in the following figure?





A

B

C

D

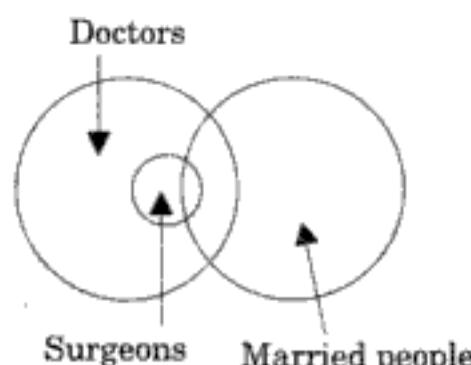
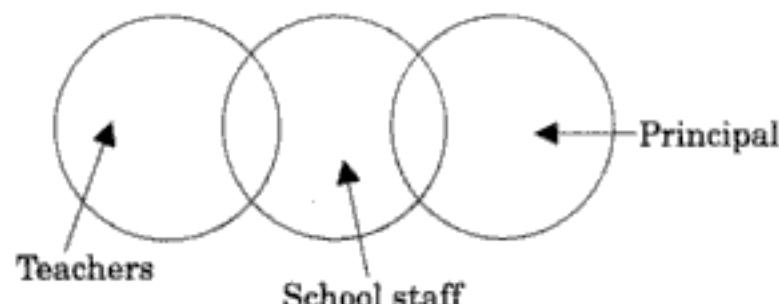
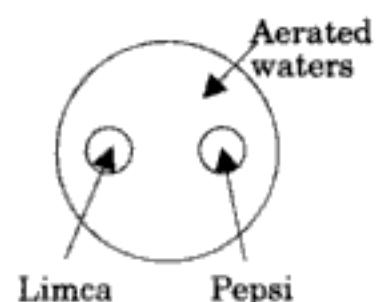
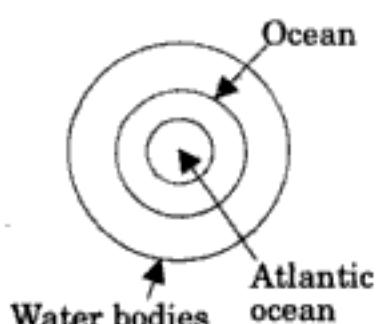
E

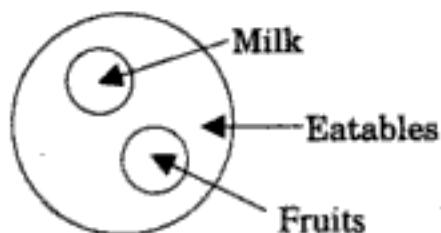
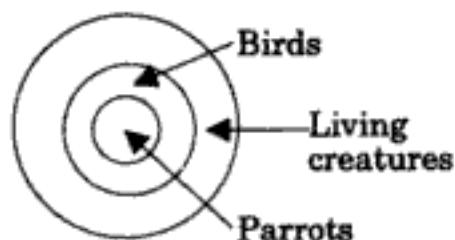
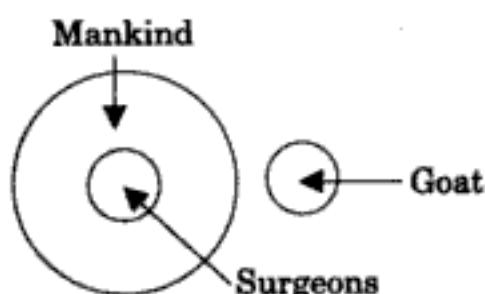
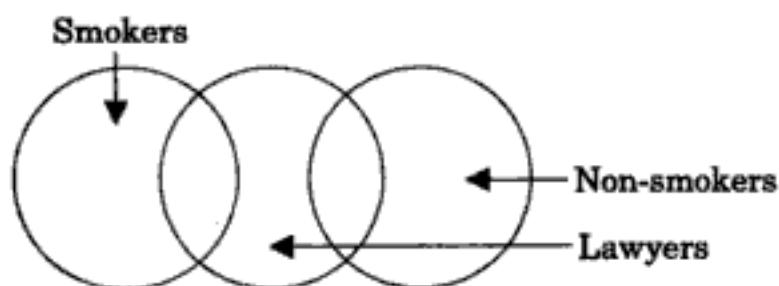
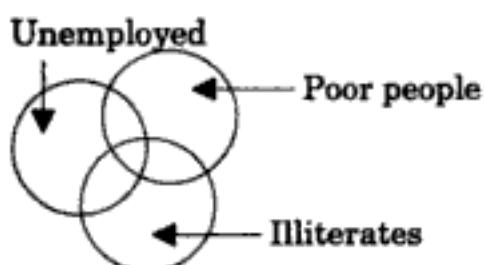
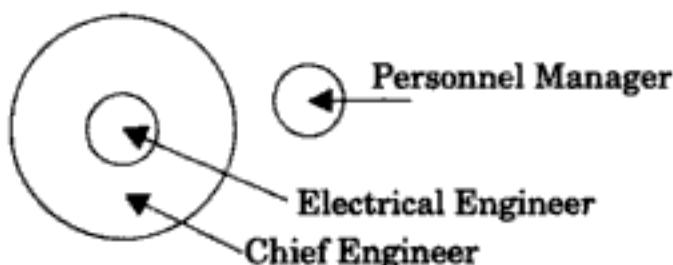
Answers and Explanations

1. (B) The hexagon is divided into six equal parts by lines drawn from its vertices, just as the three-sided triangle is divided into three equal parts by lines drawn from its vertices.
2. (C) All other letters are made with three lines, whereas letter V is made with two lines only.
3. (C) The number is obtained by adding together the three exterior numbers and subtracting the two interior numbers.
4. (C) Each figure is made up of three shapes, square, triangle, and circle. These shapes are present on each line. Hence, figure C will come in the empty block.
5. (D) Four figures change into four figures. Therefore six figures should also change into six figures.
6. (B) All the others have an odd number of squares, whereas in B it is an even number.
7. (B) All the other large figures have a smaller figure inside, which is the same as the outside figure, except in (B) where, in place of a small triangle, there should be a small square.
8. (E) All the other figures are symmetrical.
9. (E) The second figure of each pair is cut in half. The interior shape moves outside and turns 90°. All surfaces change colour.
10. (D) The figures on the bottom line are the same as those on the top line, but the shading is inverted.
11. (C) A careful examination of the question figures reveals that the small circle is moving from corner to corner in the anticlockwise direction, while the small triangle is moving in the same pattern in the clockwise direction.

12. (E) Each row contains three items, two of which are shaded.
13. (A) On dice (i), 2 and 3 exist with 1....I
On dice (ii), 2 and 3 exist with 6... II
Therefore from (I) and (II) it is evident that 1 will be opposite to 6.
14. (E) In each figure the number of small triangles pointing towards the right-hand side alternates between two and one. According to the sequence, figure E should have two small triangles attached to the upper line.
15. (D) The other figures have a sequence of letters in alphabetical order starting at the top and going clockwise.
16. (C) The white dot is moving along the four corners in clockwise direction.
To maintain the sequence, in figure C, the white dot should be on the right side of the block.
17. (B) 18. (C) 19. (B) 20. (B) 21. (C)
22. (C) 23. (A) 24. (E) 25. (B) 26. (F)
27. (D) 28. (E) 29. (F) 30. (C) 31. (A)

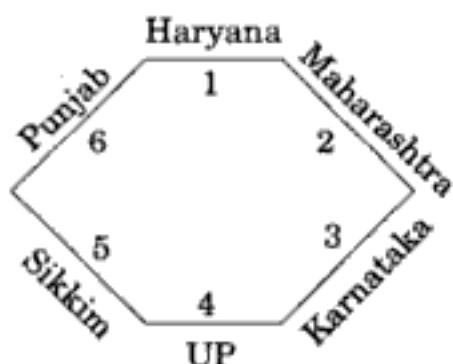
The following diagrams will clarify the answers to questions 22 to 31.





32. (C) Subtract 6 from the product of the numbers outside the triangle to obtain the interior number, i.e. $(5 \times 2 \times 3) - 6 = 24$
33. (C) 10. Divide the number at the bottom by the number on the right and subtract the number on the left.
34. (D)
35. (D)
36. (B) ICE (Thrice, Dice, Lice, Mice, Nice, Rice, Splice)
37. (C) Uttar Pradesh and Punjab. The following figure will clarify the answer.

Haryana	Maharashtra	Karnataka	Uttar Pradesh	Sikkim	Punjab
---------	-------------	-----------	---------------	--------	--------

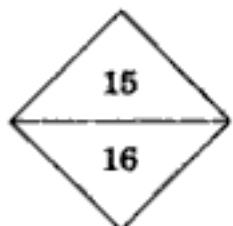


38. (D) The small circle inside is moving in a clockwise direction from one corner to another. Similarly, the black dot is moving clockwise from one corner to another. Keeping this pattern in view, answer figure D will come in the blank column (5).
39. (C) The small circle inside is moving clockwise from one corner to another. In figure C the small circle should be on the right side.
40. (C) Ocean All the others are inland water bodies.
41. (E) Cow All the others belong to the Cat family.
42. (C) Bat All the others are birds. Bat is a mammal.
43. (C) 27 Each number increases by six each time.
44. (C) 12 The middle number is obtained by adding two numbers on either side.
45. (B) 3. The third number on each side is obtained by subtracting the first

number from the second.

$$6 - 1 = 5; 8 - = 1; 7 - 4 = 3$$

46. (D) In the top triangle the progression is +1, (-2), +3, (-4). . .



47. (C) 13. The last number on each line is obtained by adding together the first two numbers and subtracting the third.

$$4 + 3 - 2 = 5$$

$$9 + 5 - 3 = 11$$

$$11 + 7 - 5 = 13$$

48. (C) 32. Each number is obtained by multiplying the preceding number by the following one.

$$1 \times 2 = 2; 2 \times 2 = 4; 2 \times 4 = 8; 4 \times 8 = 32$$

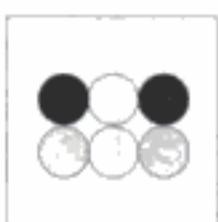
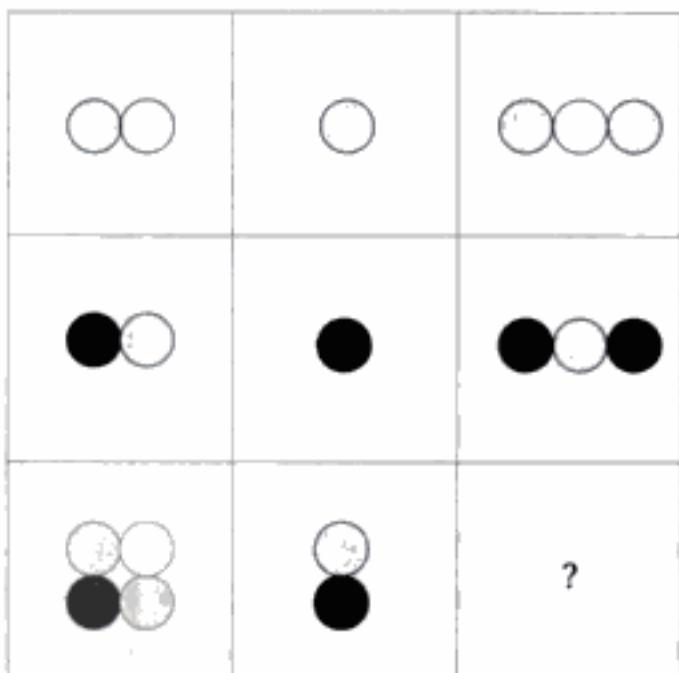
49. (C) 9. Middle number = (Left + Right) \times bottom, i.e. $(4 + 5) \times 1 = 9$

50. (B) The lower line reduces towards the right; the crosses on the top grow in number as they move down.

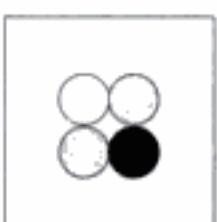
TEST PAPER 4

Directions: Select the answer figure that will fit in the blank space in each of the following blocks.

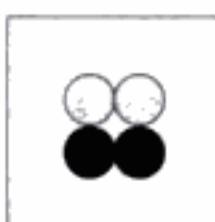
1.



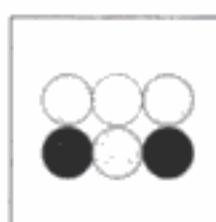
A



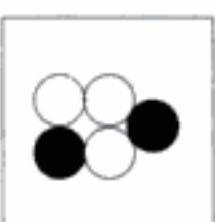
B



C

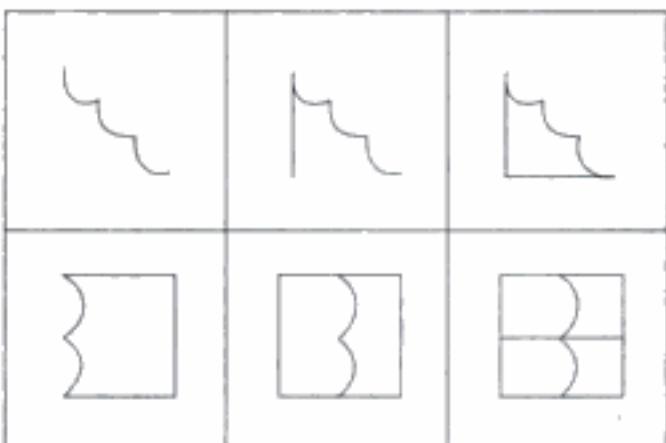


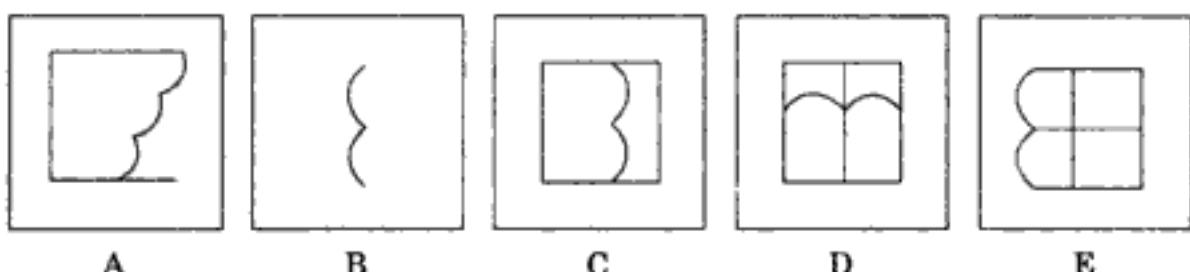
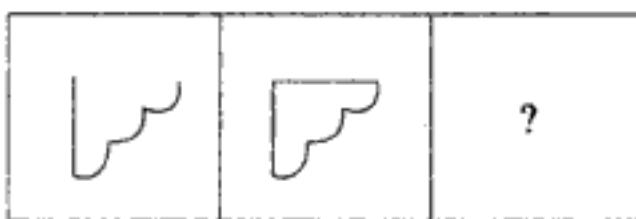
D



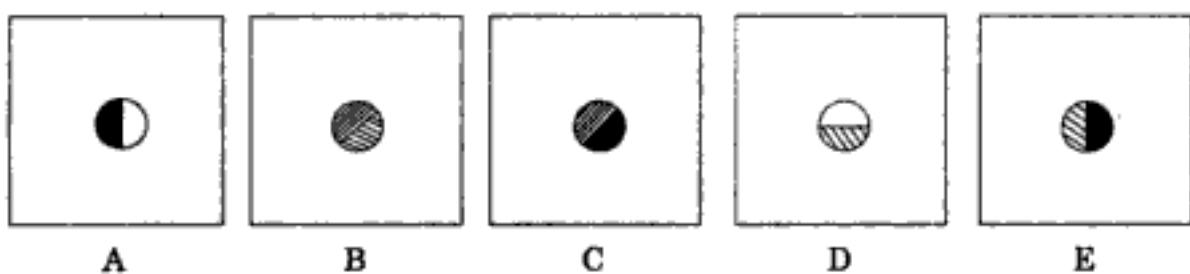
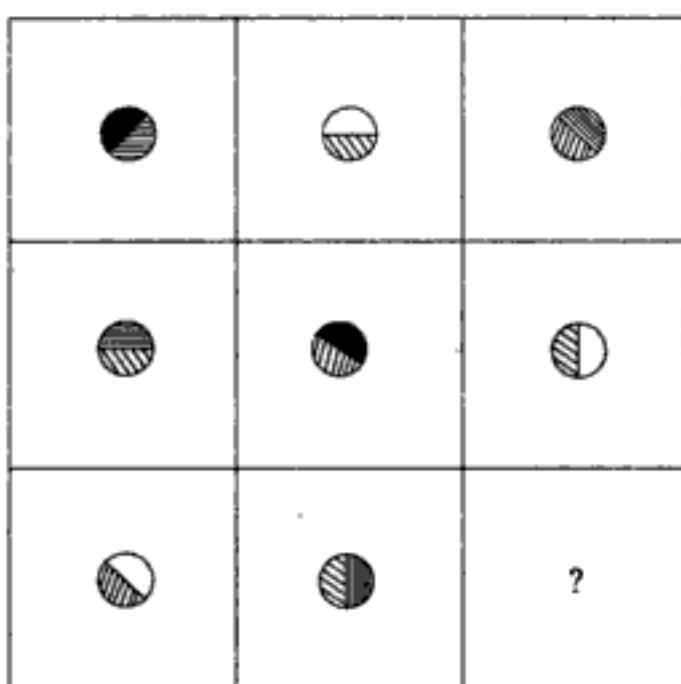
E

2.

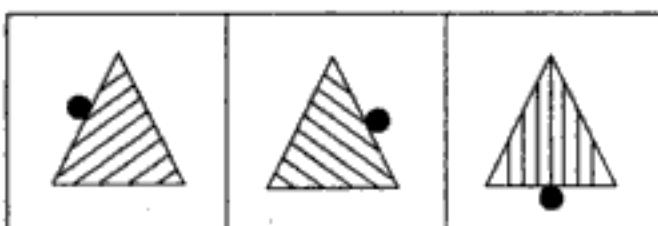


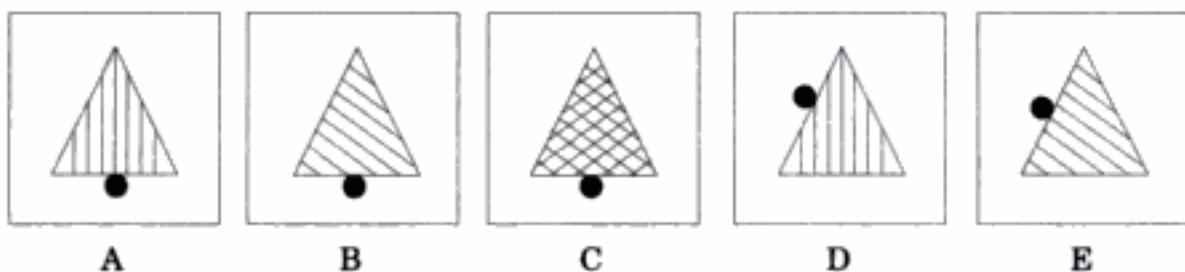
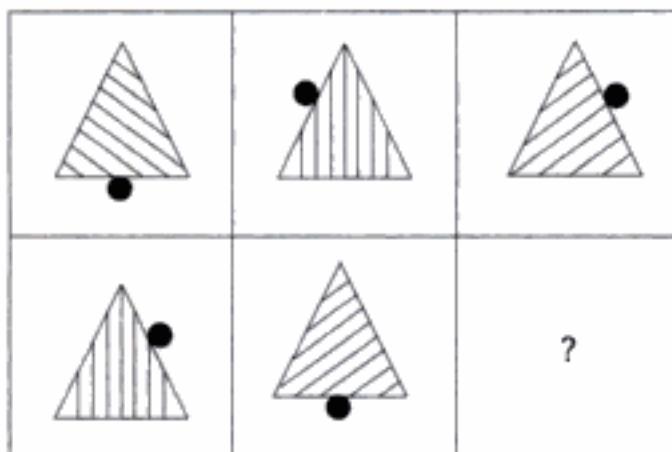


3.

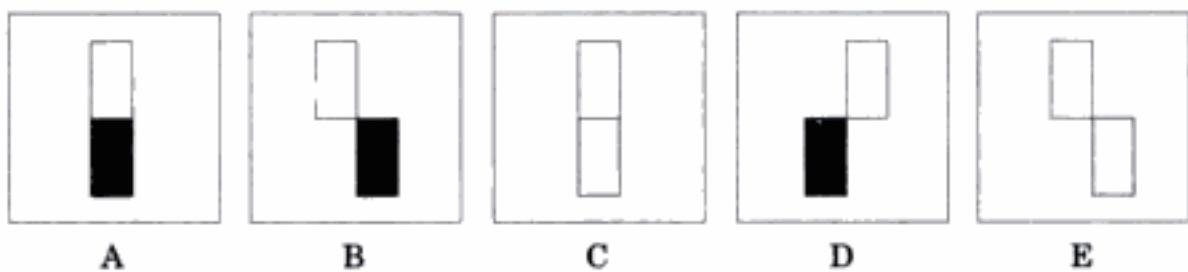
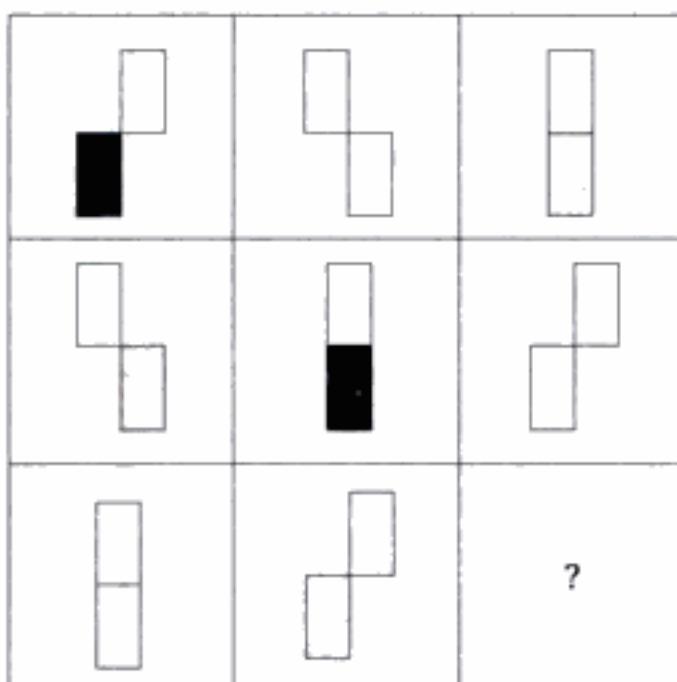


4.





5. Fill in the missing figure from the answer choices.



A

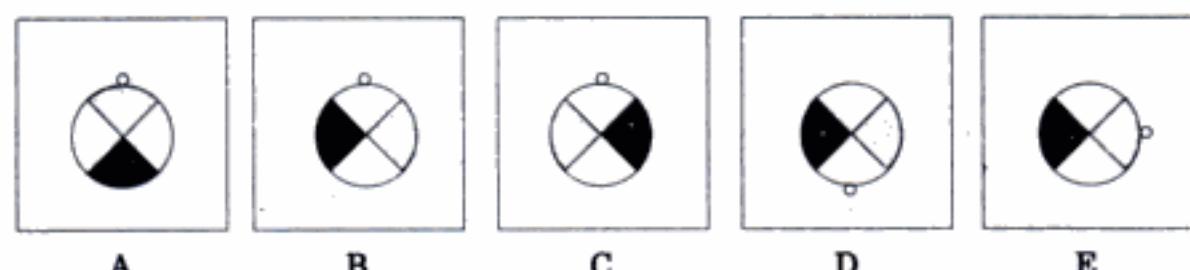
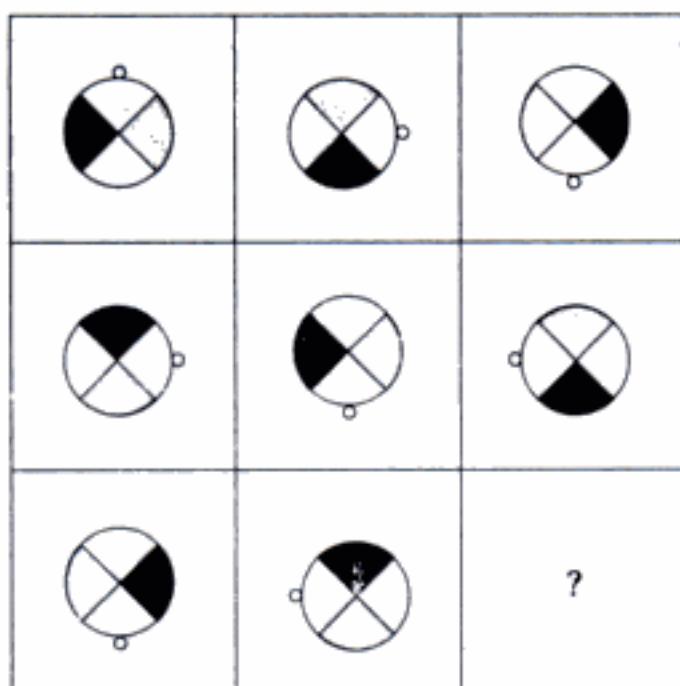
B

C

D

E

6.



A

B

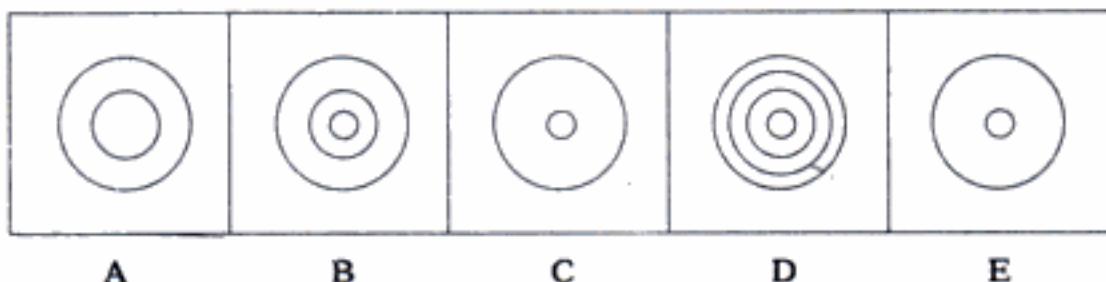
C

D

E

Directions Q (7–8): One of the following figures is different from the rest. Find the odd one out.

7.



A

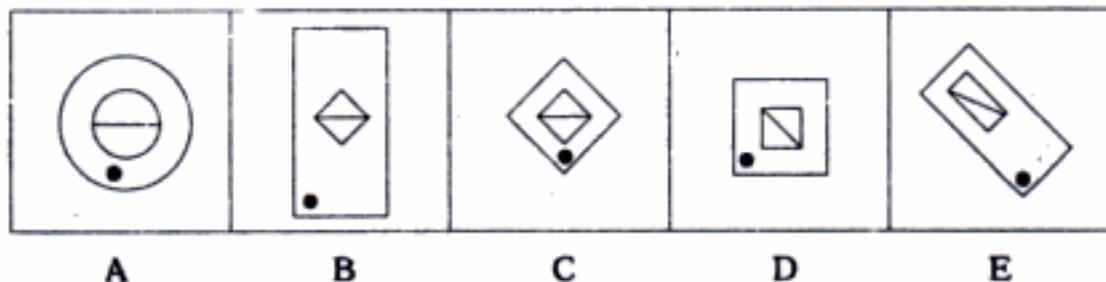
B

C

D

E

8.



A

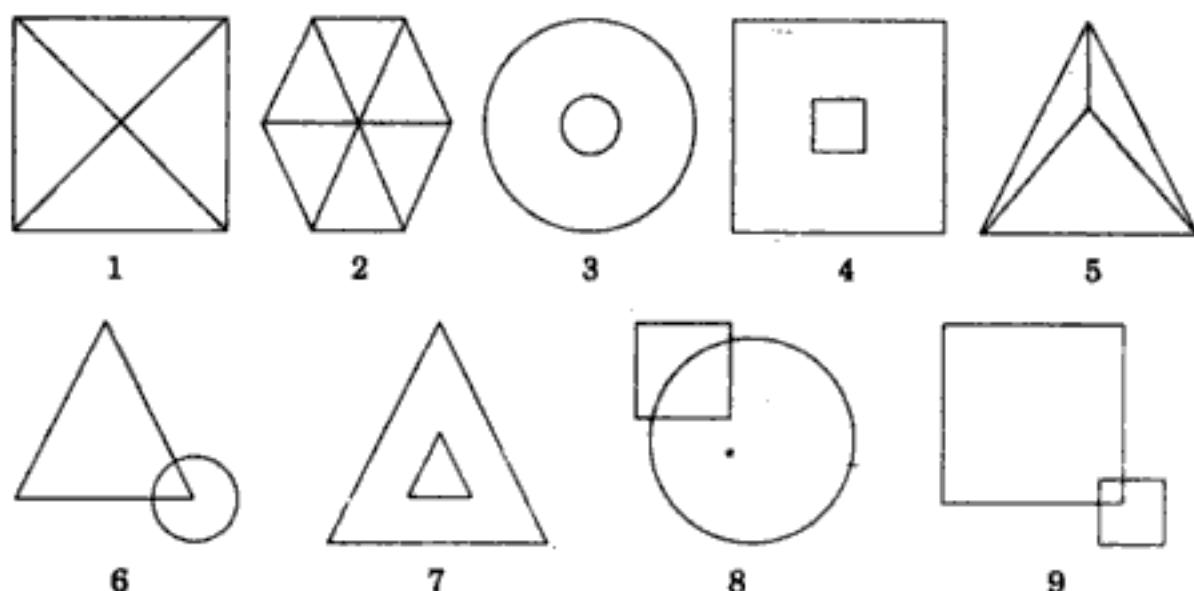
B

C

D

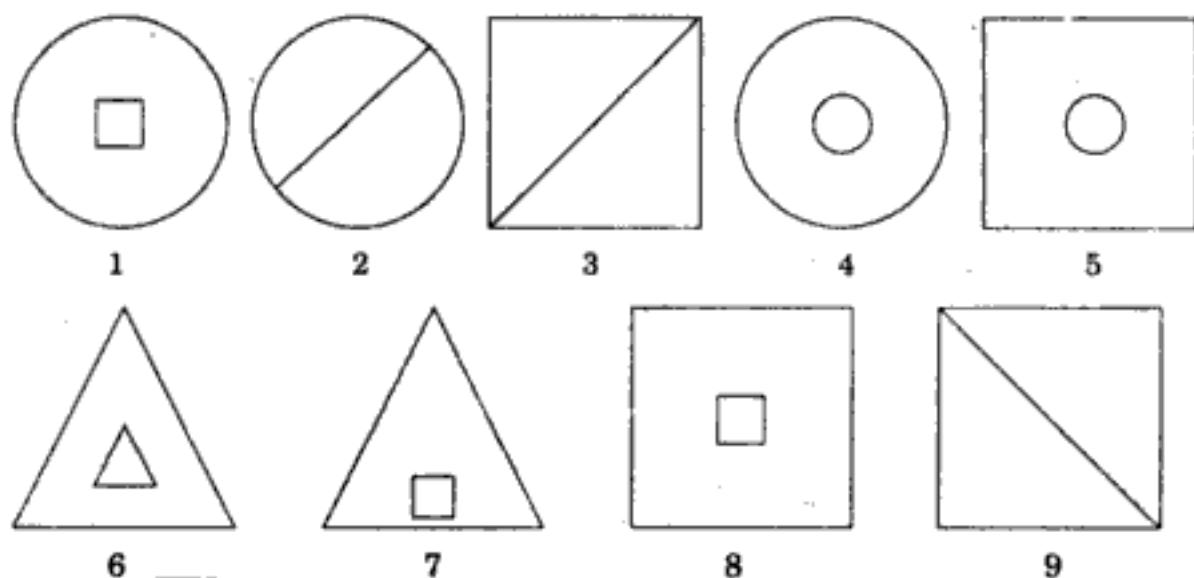
E

Directions Q (9–12): Group the following nine figures into three classes, using each figure only once.



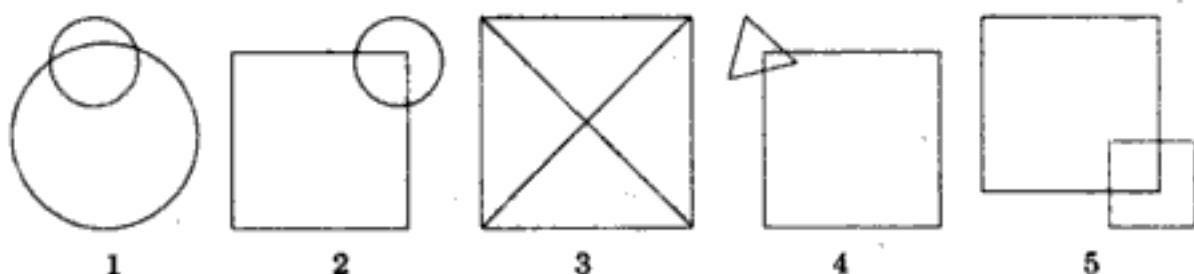
- (A) 2,3,5; 1,4,6; 7,8,9 (B) 1,2,5; 3,4,7; 6,8,9
 (C) 3,2,4; 1,5,7; 8,6,9 (D) 1,3,5; 2,7,4; 6,8,9

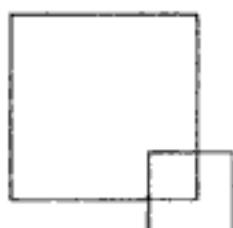
10.



- (A) 4,2,3; 1,5,6; 7,8,9 (B) 1,5,3; 2,4,6; 7,8,9
 (C) 1,5,7; 2,3,9; 4,6,8 (D) 1,3,2; 4,7,5; 6,8,9

11.





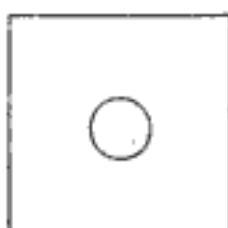
6



7



8



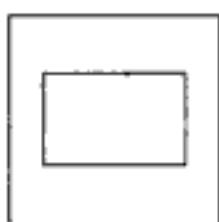
9

- (A) 1,5,9; 2,5,8; 3,4,7
 (C) 2,3,1; 5,7,8; 9,4,6

- (B) 1,5,6; 2,4,7; 3,8,9
 (D) 1,3,4; 2,5,7; 6,8,9

12.

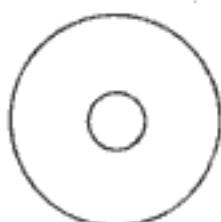
1



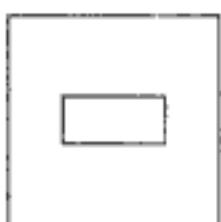
2



3



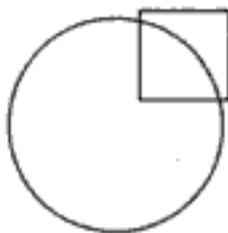
4



5



6



7



8

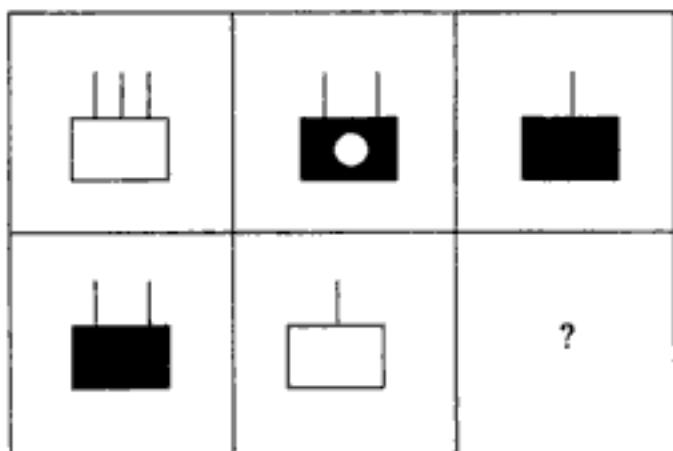


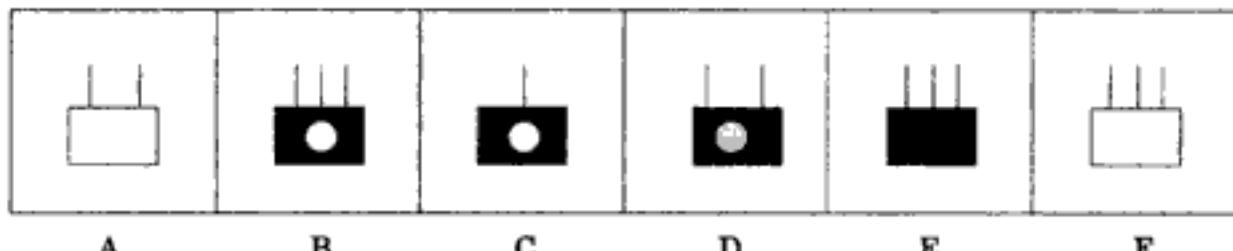
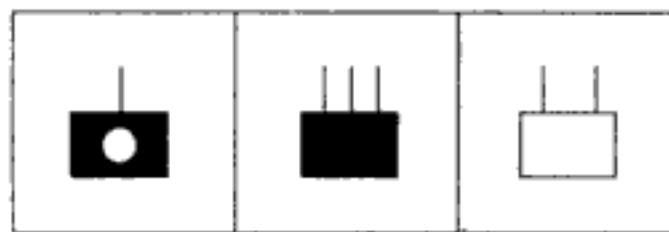
9

- (A) 1,2,3; 4,5,6,7; 7,8,9
 (C) 1,6,7; 2,4,8; 3,5,9

- (B) 1,5,9; 2,3,8; 4,6,7
 (D) 2,1,3; 6,4,9; 5,7,8

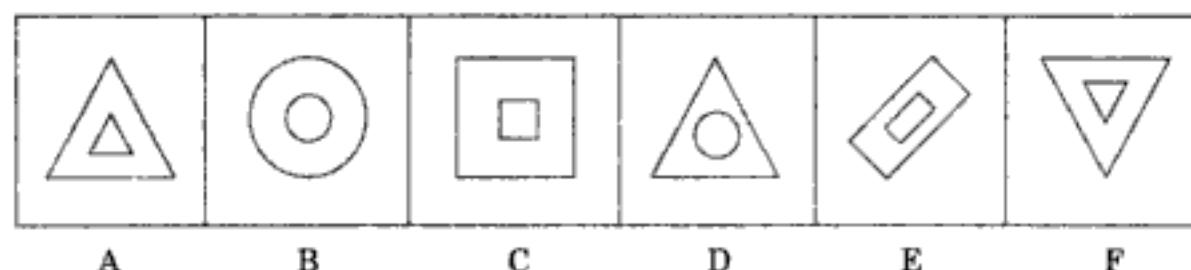
Directions: In the following key figure, which of the answer figures will replace the empty space?

13.

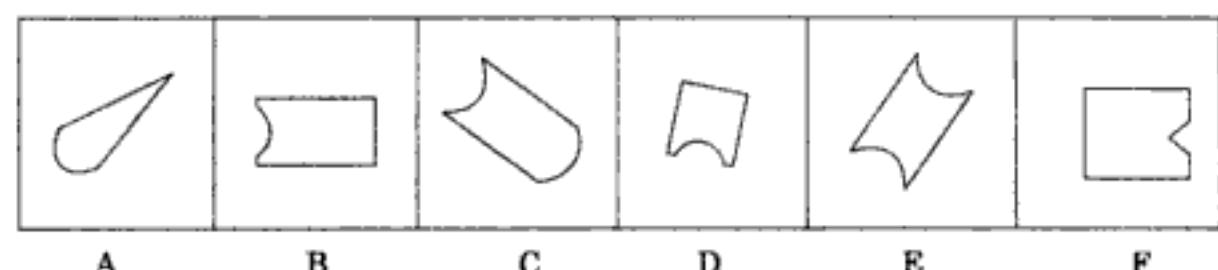


Directions: Which one of the figures in the following set of figures is odd, or different from the rest?

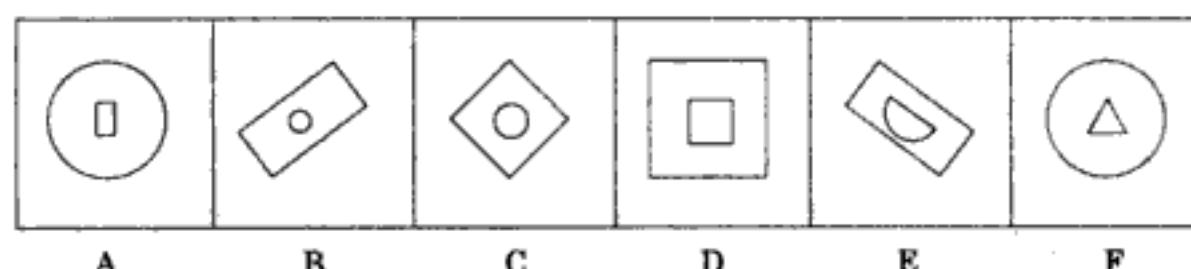
14.



15.

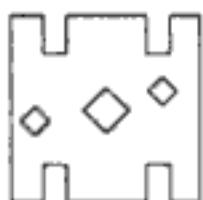


16.

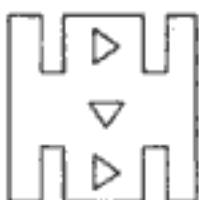


17.

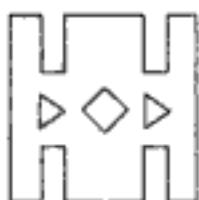
Directions: In the following questions, a square sheet of paper is folded and cuts are made as shown. How would the paper look like when unfolded?



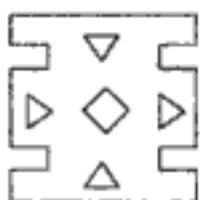
1



10



6



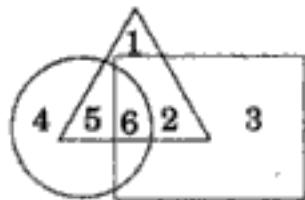
四



T

Directions: In the diagram below, each figure represents a section of society class of population as identified in the index given on the right-hand side of the main figure. Study the diagram and answer the questions that follow.

18.



△ Doctors

Professors

Married people

Which number in the figure represents married doctors?

- (A) 6 (B) 5 (C) 2 (D) 7

19. Which number in the figure shows professors who are doctors and also married?

- (A) 2 (B) 3 (C) 6 (D) 5

20. Which number indicates doctors who are not married?

- (A) 6 (B) 4 (C) 2 (D) 1

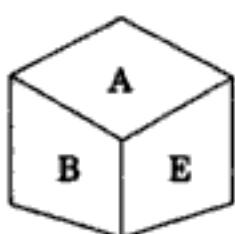
21. Which number in the figure represents professors who are not married?

- (A) 1 (B) 3 (C) 6 (D) 4

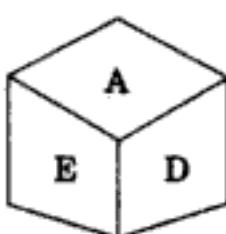
22. Which number represents professors who are married?

- 23

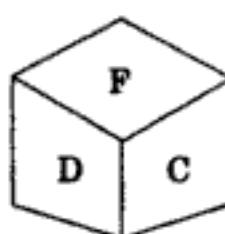
Directions: The following figures are different views of the same cube, which has a letter engraved on each of its six faces. In the last figure, one letter is missing. Study carefully all the views and find the letter on the blank face of the last figure.



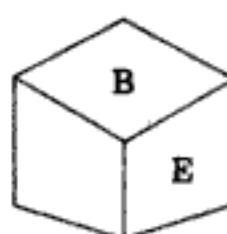
1



2



3



4

(A) D

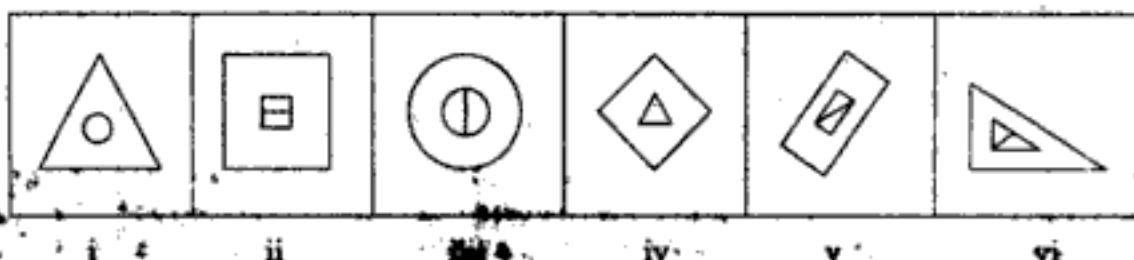
(B) F

(C) A

(D) C

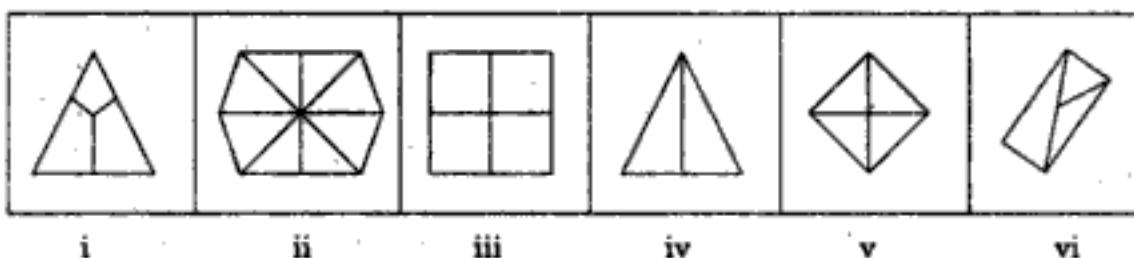
Directions: In each of the following questions, six different figures are given. You have to select two figures which have characteristics different from the other four figures.

24.



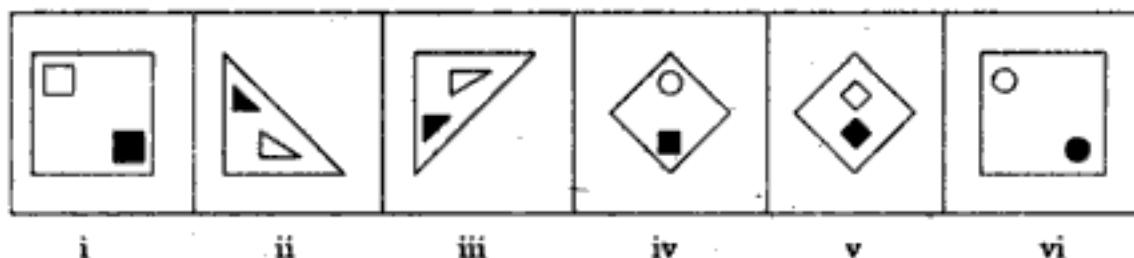
(A) (ii) and (iv) (B) (iv) and (vi) (C) (i) and (iv) (D) (i) and (v)

25.



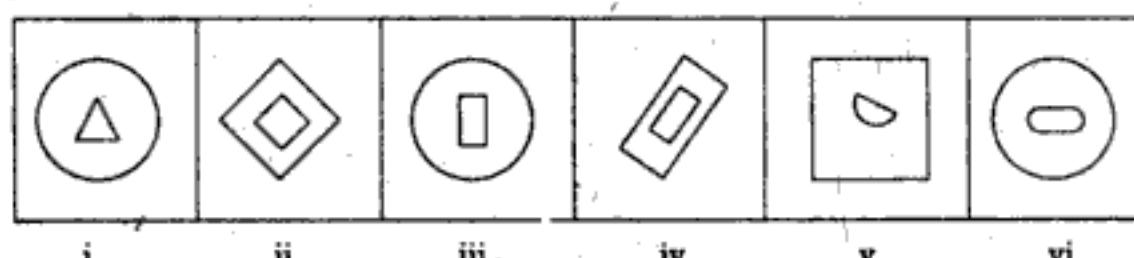
(A) (i) and (iv) (B) (ii) and (v) (C) (ii) and (vi) (D) (iii) and (vi)

26.



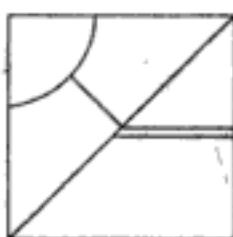
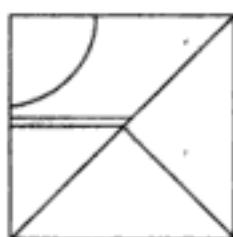
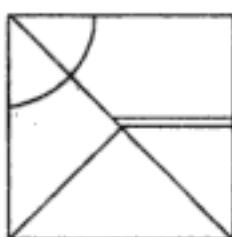
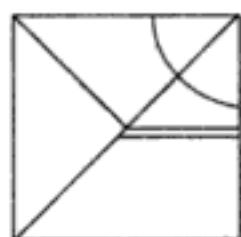
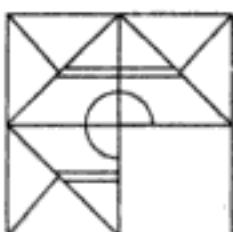
(A) (i) and (iii) (B) (iii) and (vi) (C) (ii) and (vi) (D) (iv) and (vi)

27.



(A) (ii) and (iii) (B) (i) and (iv) (C) (iii) and (iv) (D) (ii) and (iv)

31.



A

B

C

D

Directions: In the following questions, two of the cardboard shapes shown below will fit together to make a perfect square without leaving any gaps. Which two are those?

32.



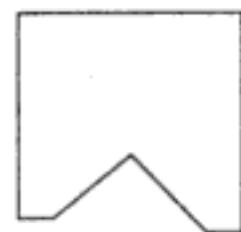
1



2



3



4



5



6

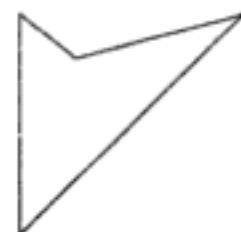
(A) 1 and 4

(B) 3 and 5

(C) 2 and 6

(D) 1 and 2

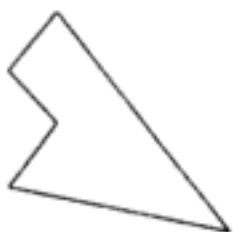
33.



1



2



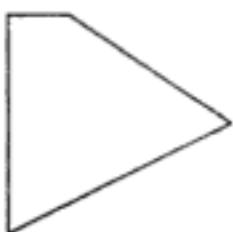
3



4



5



6

(A) 1 and 3

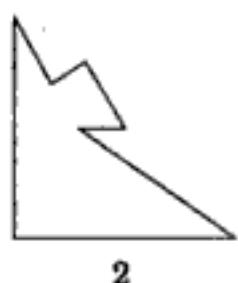
(B) 4 and 6

(C) 1 and 4

34.



1



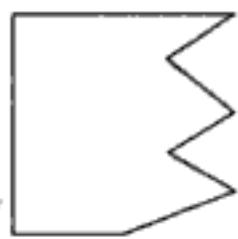
2



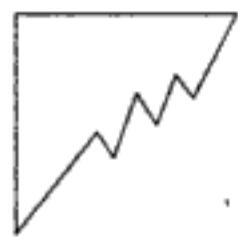
3



4



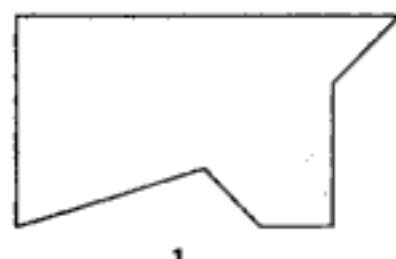
5



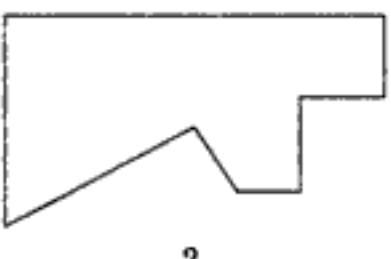
6

- (A) 1 and 3 (B) 4 and 5 (C) 1 and 6 (D) 2 and 5

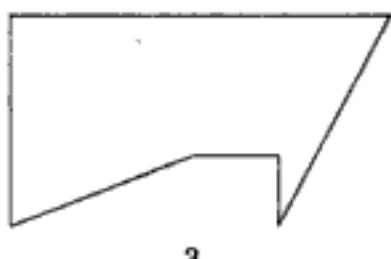
35.



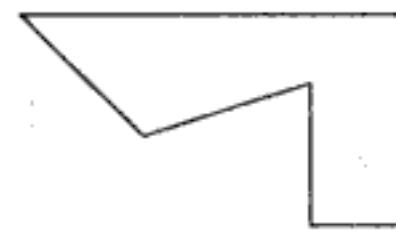
1



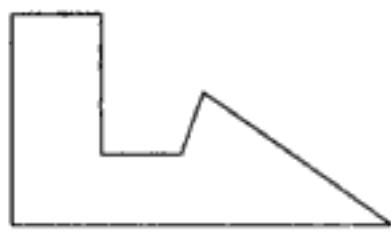
2



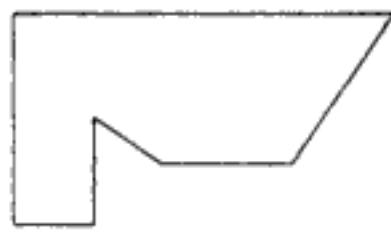
3



4



5

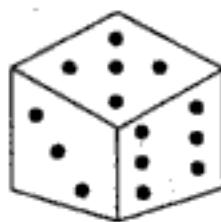


6

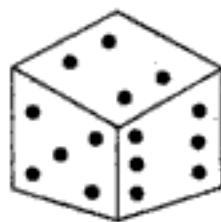
- (A) 2 and 3 (B) 1 and 3 (C) 4 and 5 (D) 2 and 5

36.

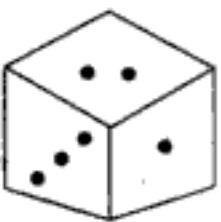
Directions: Two of the five figures are different views of the same die. Given that opposite sides must always add up to seven, which two are these?



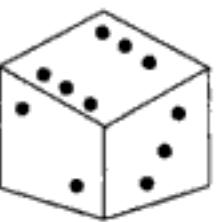
1



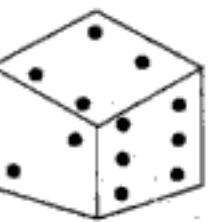
2



3



4

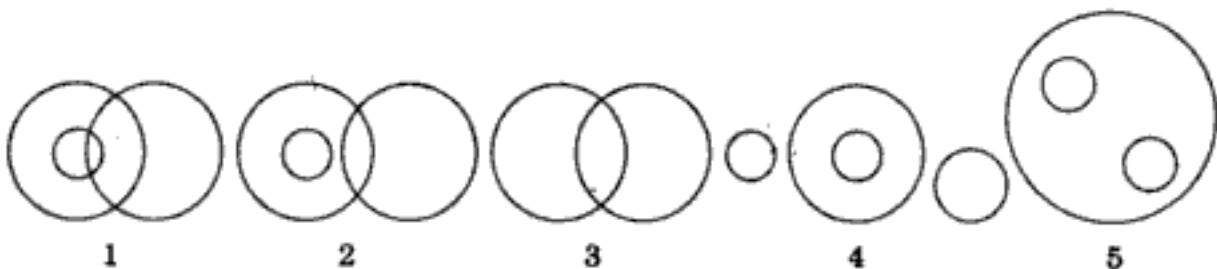


5

- (A) 1 and 3 (B) 3 and 4 (C) 2 and 4 (D) 2 and 5

37.

Directions: Select from among the five diagrams given below, the one that best illustrates the relationship among the given classes.



37. Tobacco users, bidi smokers, people with asthma

38. Tape recorders, telephones, recording instruments

39. Nurses, doctors, surgeons

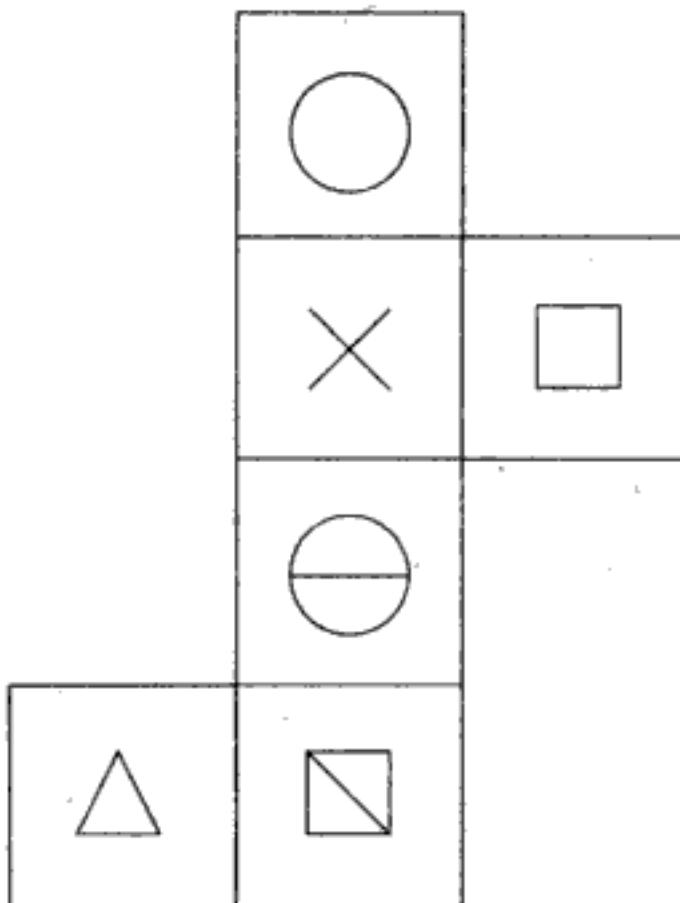
40. Rifles, killing weapons, firearms

41. Cleaning devices, toothbrushes, brooms

42. Potatoes, vegetables, Ladies Fingers

43. Instruments for punishment, gas chamber, hitting sticks

Directions: The following figure is folded along the lines to form a cube. Answer the following questions with respect to the positions of various signs.



44. Which of the following signs will be opposite to the circle?

- (A) (B) (C) (D)

45. Which of the following signs will be opposite to the square?

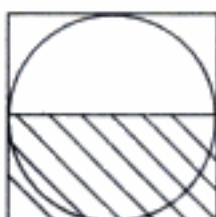
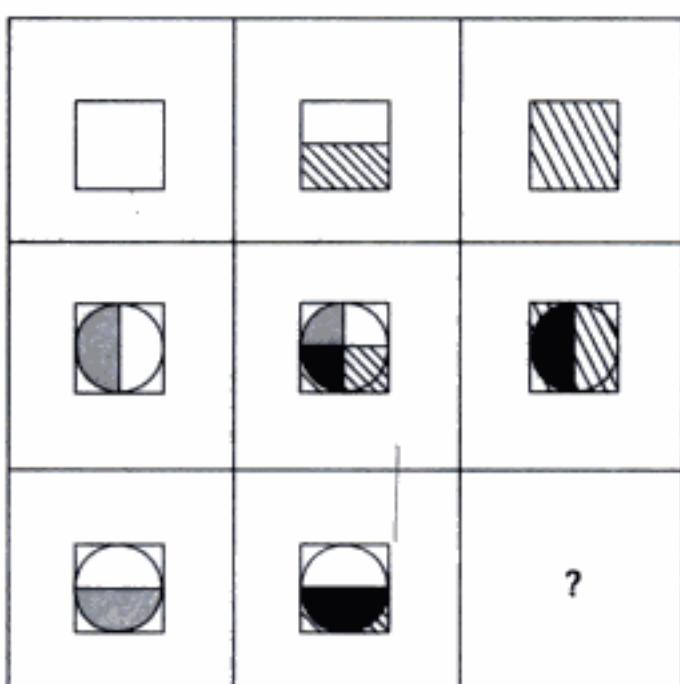
- (A) (B) (C) (D)

46. Which will be the sign opposite to the cross?

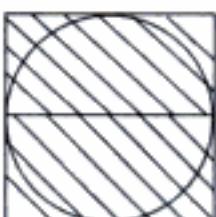
- (A) (B) (C) (D)

Directions: Select the appropriate figure to replace the question mark in the question figures.

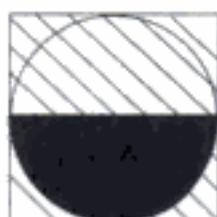
47.



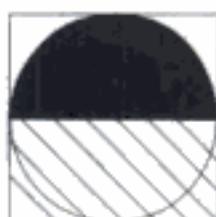
A



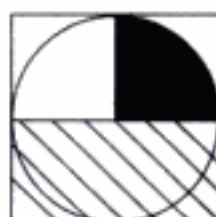
B



C

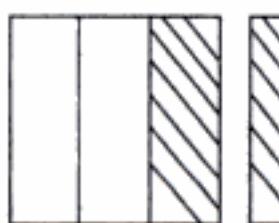
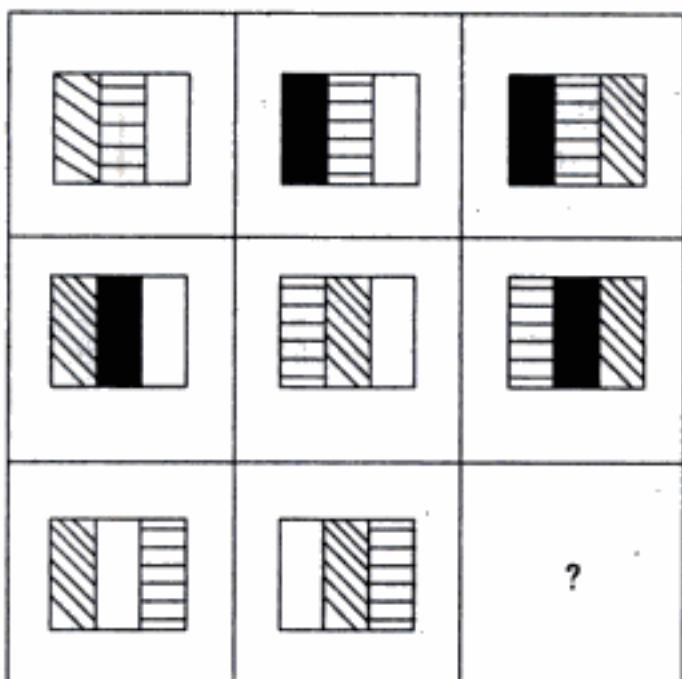


D

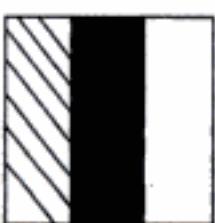


E

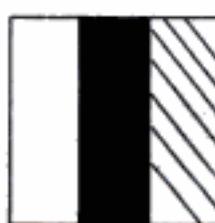
48.



A



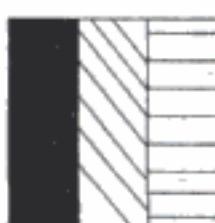
B



C

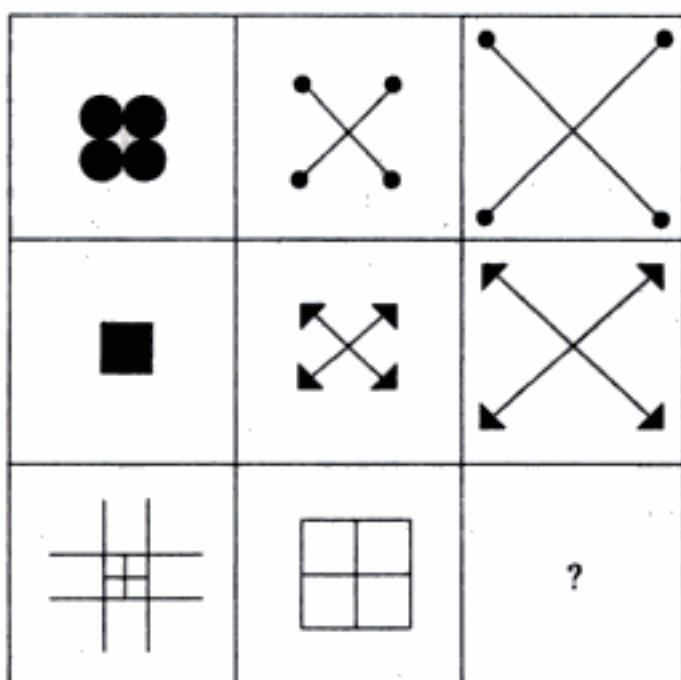


D



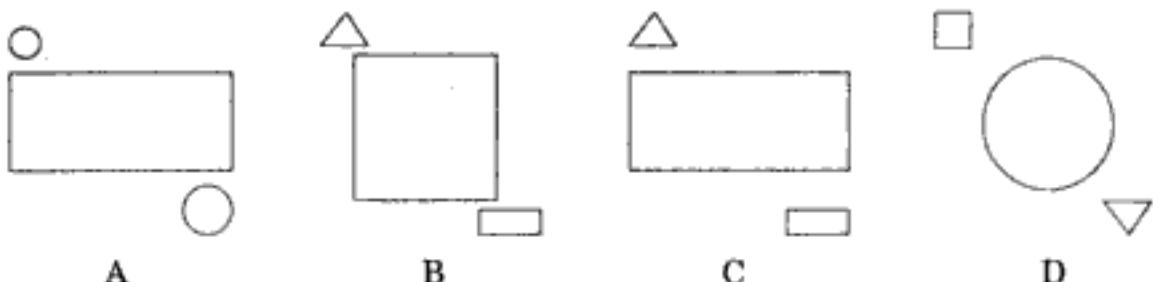
E

49.



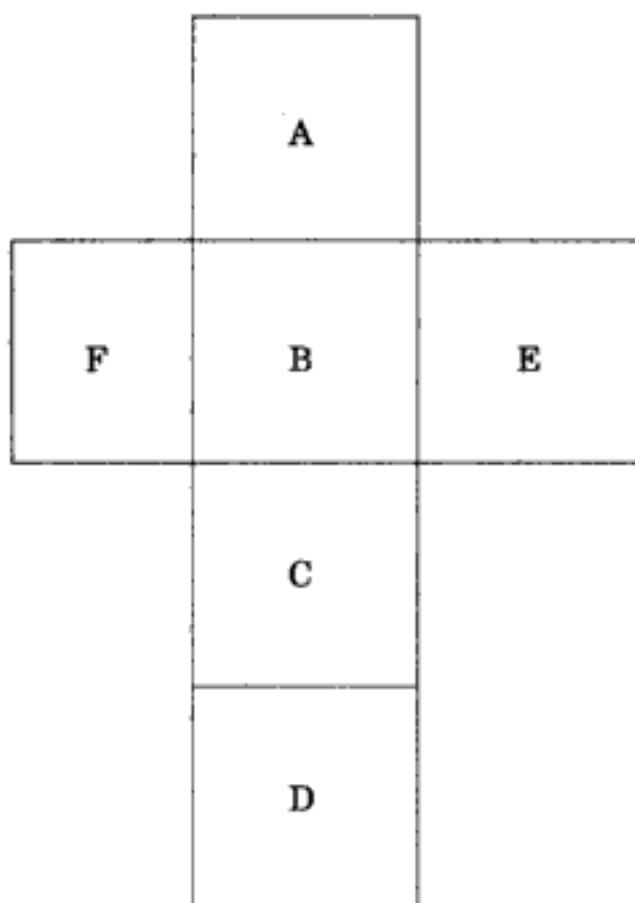


50.

**Answers and Explanations**

- (D) The third figure is the sum of the first two.
- (A) The number of straight edges increases one by one in each row.
- (E) The ball rotates regularly, half of it retaining the same shade, the rest changing its shading from black through grey to white.
- (E) The ball rotates around the triangle. The triangle also rotates.
- (B) Each different shape and different shading is repeated once in each row or column.
- (B) The ball rotates counter clockwise, the outer circle rotates clockwise.
- (B) All other figures have even number of circles, except in B which has 3 (odd).
- (B) All figures have their smaller version inside.
- (B) 1,2,5; 3,4,7; 6,8,9
- (C) 1,5,7; 2,3,9; 4,5,8
- (B) 1,5,6; 2,4,7; 3,8,9
- (C) 1,6,7; 2,4,8; 3,5,9
- (B) In each row there are three designs, white, black with white dot and black. Each design has 1, 2 and 3 horizontal lines repeated in each column. In the blank space, Figure B is needed to maintain the sequence.

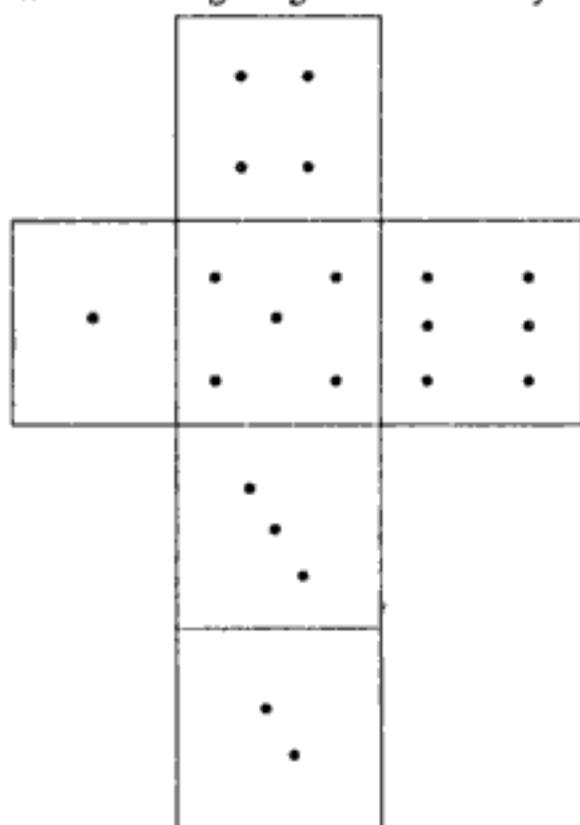
14. (D) All others enclose a smaller version of the same design
 15. (F) All have curved line/s, except F.
 16. (D) All others have different small designs inside, whereas D has a similar version inside.
 17. (E)
 18. (C)
 19. (C)
 20. (D)
 21. (D)
 22. (C)
 23. (D) The following unfolded view of the cube and the letters marked on various faces explains the answer.



24. (C) In all the other figures, a small version of the outside figure is inside the bigger one.
 25. (C) All other figures are divided into equal number of columns as they have lines making up the main figure.
 26. (D) In all other figures, two small versions of the outside design are enclosed, one shaded and the other unshaded.
 27. (D) All other figures have a different design inside; in figure ii and iv, the outside design is repeated inside.

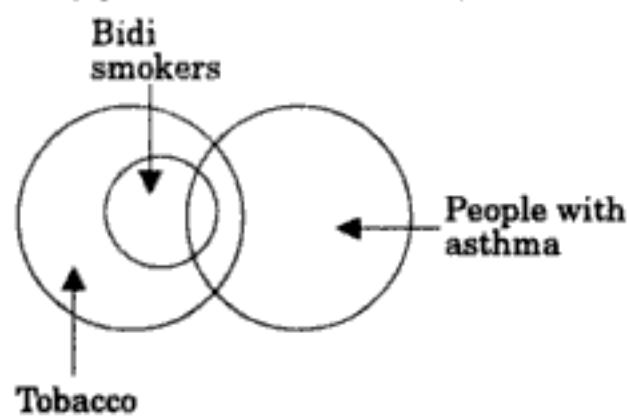
28. (A) The circle moves one place diagonally; the black square moves one place horizontally.
 29. (C) 30. (C) 31. (C) 32. (D) 1 and 2
 33. (C) 1 and 4 34. (C) 1 and 6 35. (D) 2 and 5 36. (D) 2 and 3

The following diagram will clarify the arrangement of dots on the die

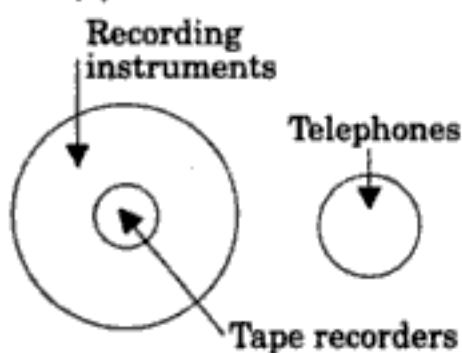


Answers to Questions 37 to 43 will be clear from the following diagrams

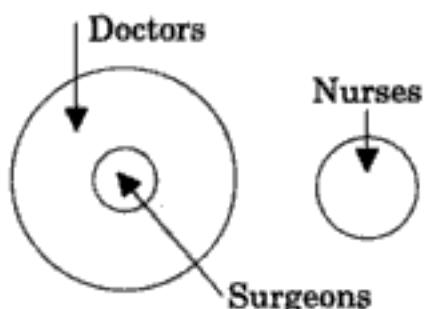
37. (1)



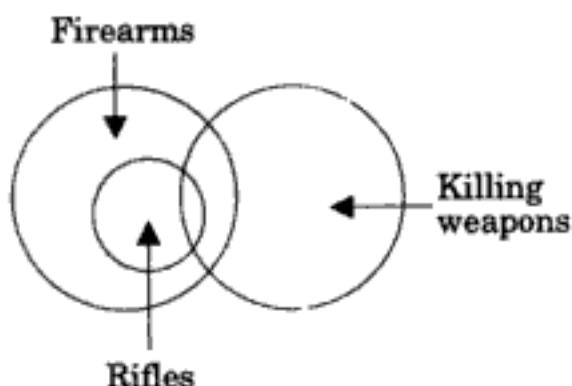
38. (4)



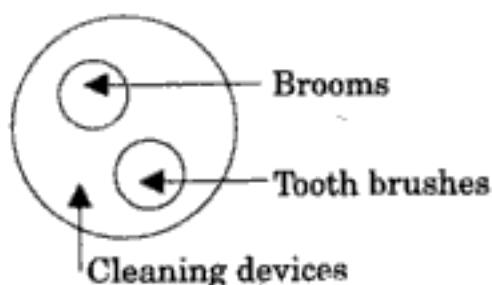
39. (4)



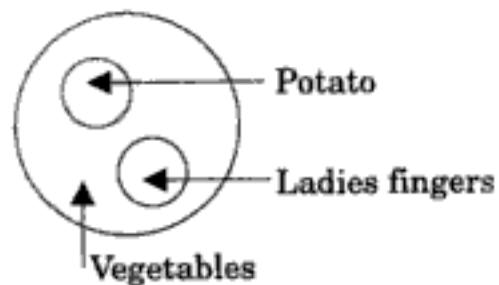
40. (1)



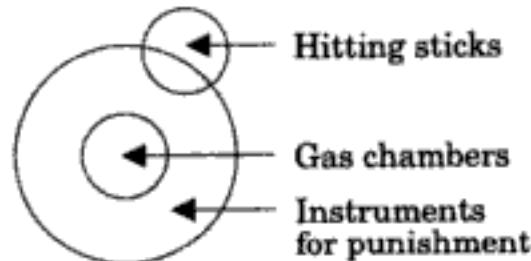
41. (5)



42. (5)



43. (2)



44. (D) 

45. (C) 

46. (D) 

47. (C) The background shading increases from left to right. The ball stays in the same position, but shading is added.
48. (A) The striped area moves, obscuring the shading underneath.
49. (D) The figures explode, although the cross-bars stretch.
50. (B)

Section 4 **Verbal Reasoning Tests**

INTRODUCTION

The word *verbal* is defined as pertaining to words rather than things. Verbal reasoning tests use words, letters and numbers, and require logical reasoning and a reasonable knowledge of the English language. It is also necessary to be familiar with simple manipulations with figures, like addition, subtraction, division and multiplication. The problems of numbers in test of reasoning will not require any advanced knowledge of maths. Instead, they will test how logical you are, that is, how well you reason and think while carrying out simple arithmetic manipulations.

Like non-verbal reasoning tests, verbal reasoning also includes three broad categories, namely Series Completion, Classification (finding the odd man out) and Analogical Relationships, in addition to other types of logical and reasoning questions. As it was with non-verbal reasoning, the time factor in verbal reasoning is very crucial. Each question has to be answered quickly. You should normally devote not more than 30 seconds to each question. Here too as in verbal reasoning, all questions carry equal marks. In this section, various types of verbal reasoning tests have been described. Once you are familiar with what and how you are required to answer, attempt the practice tests in one sitting, time yourself, and aim at a target of 25 to 30 questions to be answered in less than 30 minutes. You should soon achieve this speed if you follow the illustrations and understand the methods of solving each type of question as given in the illustrations, practice questions and practice tests. Your test of reasoning paper may comprise 50 to 60 per cent of verbal type of reasoning questions.

Before dealing with the various types of verbal reasoning questions appearing in competitive examinations, familiarise yourself with the following broad classification of verbal reasoning tests:

1. Series Completion
2. Classification (Odd Man Out)
3. Analogical Relationship
4. Coding and Decoding
5. Directional Reasoning
6. Logical Diagrams and Relationships

TYPE 1: SERIES COMPLETION

In verbal series, words, letters or digits are given in a specific sequence/order and you are asked to find out the next word, letter or digit to complete the given series. There may be questions in which you have to identify the last one or 'two letters or digits to continue the series or to find a missing letter or digit in between the given letters and numbers to continue the sequence followed in the question. As it is, there is no set pattern and each question may follow a different pattern or sequential arrangement of letters or digits, which you have to detect using your common sense and reasoning ability. Go through the following illustrations and accompanying explanations to familiarise yourself with the different types of questions that can appear in your examination.

There are mainly three types of verbal series completion questions, namely

1. Letter Series
 2. Number Series
 3. Letter and Number Mixed Series

LETTER SERIES

In the letter series, you are given some letters which follow a particular sequence or order. You have to detect the pattern from the given letters and find the missing letter or the next letter to continue the pattern.

Illustrations

Directions: In the following questions, you are given some letters which follow a set pattern. Under each series, there are four answer choices, marked (a) to (d). Find the answer choice that can replace the question mark in the letter series.

ANSWERS:

1. (c) V 2. (d) Y 3. (c) T 4. (d) O 5. (d) G

Explanations

- 1.(c)V: The series is formed by skipping one letter each time J (K) L (M) N (O) P (Q) E (S) T (U) V. Letters in brackets are the ones skipped.
- 2.(d)Y: It is an alphabetical sequence where each letter is separated from the preceding one by 2, 4, 6 and 8 letters. A (BC) D (EFGH) I (JKLMNO) P (QRSTUWX) Y.
- 3.(c)T: Each letter is separated by two and three letters alternately F (GH) I (JKL) M (NO) P (QRS) T.
- 4.(d)O: It is an alphabetical progression where C is the second letter after A, F is the third letter after C, J is the fourth letter after F, and O is the fifth letter after J.
- 5.(d)G: It is an alphabetical progression where each letter is separated from the following one by 2, 4, 6, 8, 10 and 12 letters, alternately forwards and backwards M (NO) P (ONML) K (LMNOPQ) R (QPONMLKJ) I (JKLMNOPQRS) T (SRQPONMK LJIH) G.

Practice Questions

Directions: The following questions are based on letter series, each having a different pattern. Study the series carefully to determine the order (pattern). Select the answer from the choices given below to continue the series.

1. D I L Q T Y B G?
 (a) H (b) I (c) O (d) P (e) J
2. X U S P N K I ?
 (a) J (b) K (c) M (d) F (e) O
3. D F I M R ?
 (a) S (b) U (c) U (d) X (e) Z
4. B D G I L N ?
 (a) O (b) Q (c) S (d) U (e) Q
5. L Q T Y B G ?
 (a) H (b) J (c) R (d) J (e) Q
6. J E Z U P J ?
 (a) K (b) M (c) O (d) P (e) J
7. HV GT FR EP DN ?
 (a) KL (b) LM (c) MN (d) NO (e) CL

8. U B I P W ?

- (a) V (b) F (c) X (d) M (e) D

9. T S Q N J ?

- (a) S (b) E (c) K (d) L (e) N

10. S P L G ?

- (a) H (b) I (c) K (d) A (e) H

11. B E I N T ?

- (a) R (b) S (c) U (d) A (e) V

12. B F K Q ?

- (a) R (b) S (c) W (d) X (e) C

13. R T P R N P ?

- (a) Q (b) L (c) S (d) F (e) K

14. W T P M I F B ?

- (a) W (b) P (c) F (d) Y (e) V

15. X W V U T S ?

- (a) R (b) T (c) E (d) X (e) P

Answers and Explanations

1. (e) After D, 4 letters are skipped and I follows, after which 2 letters are skipped. The trend follows alternately.

D(EFGH) I (JK) L (MNOP) Q (RS) T (UVWX)Y(ZA)B(CDEF)G (HI)
J

2. (d) After X, 2 letters are skipped and U follows, after which 1 letter is skipped and S follows. In this manner after every letter, letters are skipped in the order of 2 and 1 alternately.

3. (d) Letters are skipped in the order as 1, 2, 3, 4, 5

D (E) F (GH) I (JKL) M (NOPQ) R (STUVW)
1 2 3 4 5

4. (b) Letters are skipped 1 and 2 alternately.

B (C) D (EF) G (H) I (JK) L (M) N (OP) Q

5. (b) Four and 2 letters are skipped alternately

L (MNOP) Q (RS) T (UVWX) Y (ZA) B (CDEF) G (HI) J

6. (a) Every fifth letter backward from J.
 7. (e) 2 alternating series, one going backwards from H and one going forwards with every 2nd letter from V.
 8. (e) Every seventh letter alphabetically.
 9. (b) The interval increases by one each time as we move backwards.
 TS(R) Q (PO) N (MLK) J (IHGF) E
 10. (d) The letters go back by 2, 3, 4, 5, 6 in that order.
 S(RQ) P(OMN) L (KLJI) G(FEDCB)
 2 3 4 5
 11. (d) Letters to up by 2, 3, 4, 5, 6 - in that order
 B (CD) E (FGH) I (JKLM) N (OPQRS) T (UVWXYZ) A
 2 3 4 5 6
 Circular continuation follows, i.e. after Z, we again begin with A.
 12. (d) Skipped letters go up by 4, 5, 6, 7, 8
 B (CDE) F (GHIJ) K (LMNOP) Q (RSTUVW)X
 13. (b) Move 2 letters forward and 4 letters backwards alternately.
 14. (d) Skip 2 and 3 steps back in the alphabetical order alternately
 W (VU) T (SRQ) P(ON) M (LKJ)I (HG) F (EDC) B B (AZ) Y
 15. (a) Two letters are skipped alternately.
 R (ST) S (TU) T (UV) U (VW) V (WX) W (XY) X (YZ)

Hints to Solve the Letter Series

There are no set rules. In each case you have to discover the pattern adopted. There can be omission of letters in an order, for example, one each time. Letters may also be omitted in an increasing/decreasing order, which may be direct increase or decrease, for example, one each time, two each time, three each time, and so on. There can also be alternate order, such as, first one letter is skipped, then two letters, then three letters, and so on. There may also be alternate sequences, for example, first one letter and then two letters are skipped alternately. These are some of the typical patterns that you will encounter. Besides these, there may be several other patterns in the letter series.

The easiest way to tackle letter series questions is to be vary of the position of the alphabet and its position number in both forward and backward sequences. For instance,

A	B	C	D	E	F	G	H	I	J	K	L	M	... and so on
1	2	3	4	5	6	7	8	9	10	11	12	13	(forward)
26	25	24	23	22	21	20	19	18	17	16	15	14	(backward)

Also remember that to continue the series after Z, we again begin with A. In other words, the sequence is kept in a circular order.

Some skipping patterns are described below:

- (i) *Regular order*: The number of letters skipped remains the same. As in illustration 1 above, in which each time only one letter is skipped.
- (ii) *Increasing order*: Each time the number of letters skipped increases in a given pattern. For example,

A C F J Q ?

ANSWER: U

Here, each time the number of letters skipped increases by one.

- (iii) *Decreasing order*: Each time the number of letters skipped decreases in a given pattern. For example,

A G L P S ?

ANSWER: U

Here the number of letters skipped decreases by one each time, that is, first 5, then 4, then 3, and so on.

- (iv) *Interlinked series*: For example,

A D F J M R ?

ANSWER: V

Here, there are two interlinked series. Recall the numbered alphabet table and write down the number of letters skipped.

You will realize that there are two interlinked series:



Here, the first series follows the pattern 2, 3, 4 and the second series



1, 2, ?.

Therefore, to replace the question mark, three letters should be skipped. To get the answer, skip three letters after R; that is R (s t u) V. The letter V will replace the question mark.

There may be several other such patterns for forming a letter series. With a little practice, you will be able to determine the pattern involved. Some more illustrations are given here to familiarise you with these types of questions.

1. M T W T F S ?

2. J F M A M J ?

ANSWERS: 1. S 2. J

In question 1, the first letter of the day of the week forms the series, that is M(onday) T(uesday) W(ednesday) T(hursday) F(riday) S(aturday). The next letter to replace the question mark (?) will be again S, representing Sunday.

In question 2, the first letter of the name of the month is given, namely J(anuary) F(ebruary), M(arch), A(pril), M(ay) J(une). After June, therefore, we will have J again, representing July. Therefore, the next letter in this series will be J.

Practice Questions

Directions: Supply the right letters in place of the question marks in the following questions

1. A C F J O ?
 (a) P (b) Q (c) U (d) V (e) L
2. A D E H I L ? ?
 (a) MP (b) MN (c) MO (d) MQ (e) NM
3. A Z B Y C X D ?
 (a) E (b) W (c) R (d) L (e) P
4. CD HI MN ??
 (a) QS (b) RS (c) OP (d) PQ (e) ST
5. AU BY CZ ??
 (a) BC (b) KL (c) MN (d) PN (e) DX
6. A G L P S ?
 (a) X (b) Y (c) W (d) U (e) Z
7. R U X A D ?
 (a) E (b) F (c) G (d) I (e) H
8. C F I L O ?
 (a) P (b) Q (c) R (d) S (e) T
9. E G J L O Q ?
 (a) S (b) R (c) U (d) V (e) T
10. B J Q W B F ?
 (a) F (b) G (c) H (d) I (e) E
11. I P Q W X C ?
 (a) C (b) D (c) F (d) G (e) E

12. C E I K O Q ?

- (a) R (b) S (c) T (d) U (e) V

6

13. Z X V T R P ?

- (a) Q (b) R (c) S (d) M (e) N

14. X U S P N K ?

- (a) I (b) L (c) M (d) Q (e) Y

15. T Q N K H ?

- (a) F (b) L (c) S (d) E (e) R

Answers and Explanations

1. (c) Letters follow alphabetical order and the letters skipped in between increase in number in an ascending order, each time.

A(B) C (DE) F (GHI) J (KLMN) O (PQRST) U

1 2 3 4 5

2. (a) Alphabets are grouped in rows of four (ABCD, EFGH...) and the initial and the final letter of each row are taken to form the series.

3. (b) Letter sets are formed by taking a letter from forward order (A-Z) and one letter from backward order (Z-A).

4. (b) After a set of two consecutive letters, three letters are skipped, that is, CD (EFG) HI (JKL) MN (OPQ) RS

3 3 3

5. (e) Alphabet blocked into a 4 letter vertical columns (4 alphabets in the row) and 6 rows alphabets in the column, except vertical columns 2 and 3 which have 7 letters). Vertically, column A ends in U, column B ends in Y, column C ends in Z and obviously the last column starting from D will end in X.

6. (d) Letters follow alphabetical order. Skipping is done in decreasing order. A (BCDEF) G (HIJK) L (MNO) P (QR) S (T) U

5 4 3 2 1

7. (c) Two intervening letters are skipped in the alphabetical order: R (ST) U (VW) X (YZ) A (BC) D (EF) G

As explained earlier, circular continuity is maintained, that is, after Z, we come back to the A B C D order.

8. (c) Two consecutive letters are skipped after each letter.

9. (e) One letter and two letters are skipped alternately.

10. (d) Letters maintain alphabetical order and the number of letters skipped decrease by one each time. First 7 letters are skipped, then 6, 5, 4, 3 and so on.

11. (b) I (JKLMNO) PQ (RSTIUV) WX (YZAB) CD
 6 5 4

12. (d) Letters are skipped in the order of 1 and 3 alternately.

C (D) E (FGH) I (J) K (LMN) O (P) Q (RST) U

13. (e) Backward order of letter is taken, skipping one letter alternately, that is Z (Y)X (W) V (U) T (S) R (Q) P (O) N

14. (a) Backward order is taken (Z-A). Letters are skipped in the order of 2 and 1 alternately.

X(WV) U (T) S (RQ) P (JO) N (ML) K (J) I (HG) F and so on.

15. (d) Backward order is followed skipping 2 letters alternately.

T (SR) Q (PO) N (ML) K (JI) H (GF) E

Formats

Letter series questions may be in various formats, for example:

Illustrations

1. Which letter will come in the blank square?

H	M	C
J	N	F
L	O	

(a) P

(b) N

(c) H

(d) I

2. Which two letters will come in place of the question marks?

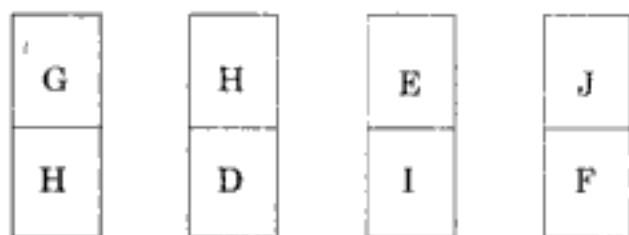
A
E

G
C

?
?

K
G

I
M



- (a) (b) (c) (d)
ANSWER: 1. (d) 2. (c)

Explanations

- Working downwards in vertical columns, the first column has breaks of one letter. In the second column, there are no breaks. In the third column, two letters are skipped.
 - H (I) J (K) L
 - M N O
 - C (DE) F (GH) I
- Here the letters zigzag alphabetically from top left to bottom right with a gap of one letter each time:
 A (B) C (D) E (F) G (H) I and
 E (F) G (H) I (J) K (L) M

Practice Questions

Directions: In each of the following questions, there is a series of letters/group of letters in accordance with a pattern. Discover the pattern involved in each question and select the correct answer from the choices given.

- AD EH IL -- QT UX
 - AY
 - VB
 - CW
 - DX
 - MP
- AY BZ CW --
 - EF
 - GH
 - MN
 - IK
 - DX
- BC FG JK -- RS VW
 - LM
 - OP
 - QR
 - NO
 - ST
- CD GH KL OP ST --
 - RS
 - QR
 - GH
 - WX
 - RN
- XD WC -- YA
 - XY
 - CD
 - OP
 - WV
 - ZB

- 6.** AI BJ CK --
(a) LM (b) GH (c) QR (d) SE (e) DL
- 7.** AM EI BN FG CO GK DP --
(a) PQ (b) QR (c) QT (d) HL (e) HG
- 8.** A C B E C G D ??
(a) MN (b) LM (c) IE (d) GH (e) XY
- 9.** Z W S P L I E ?
(a) D (b) F (c) G (d) B (e) K
- 10.** A E J
P T ?
(a) U (b) V (c) R (d) Y (e) X
- 11.** AC EG BD FH IK --
(a) LM (b) OP (c) IJ (d) JL (e) JK
- 12.** C G K O S
A E I M Q
E I M Q ?
(a) W (b) X (c) V (d) U (e) M
- 13.** A D H M
C F J O
B E I N
F I M ?
(a) P (b) Q (c) R (d) S (e) T
- 14.** A D C F
C F E H
E H G K
O R ? ?
(a) LK (b) MN (c) ST (d) QT (e) XY
- 15.** F I L O R
E H K N Q
I L O R U
K N Q ? W
(a) S (b) T (c) X (d) Y (e) M

Answers and Explanations

1. (e) The alphabets are arranged in a block of 4 letter rows A-D, E-H, I-L, M-P, Q-T, U-X and Y-Z. The series comprises of the initial and the final letter of the rows arranged as above.
2. (e) Initial and final letters of vertical rows are taken from 4 letter rows of alphabet as made for Question 1.
3. (d) The middle pair of letters is taken from the 4 letter block.
4. (d) Last pair of letters is taken from the 4 letter block.
5. (e) Initial and last letter taken from downwards to upwards in the 4 letter block.
6. (e) Vertically 1st and 3rd letter of the column is taken skipping one in between.
7. (d) Vertically 1st and 4th letter of the column is taken skipping two letters in between.

To fully understand the basis of these questions, make the 4 letter block of the alphabet and the above answers will be explained clearly by a careful scrutiny of the block.

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P
Q	R	S	T
U	V	W	X
Y	Z	-	-

8. (c) There are 2 alternate series each from A and from alternate letter C.
9. (d) Skip 2 and 3 steps backwards in the alphabetic alternately.
10. (d) From A to J, there are 10 letters (both inclusive) 3 of which are written in the question and between A to J, seven letters are skipped. Based on this, between P to ? there should be 10 letters, out of which 2 are written (P and T), skipping only 7 letters. Hence counting from P to ?, based on A-J pattern, 7 letters are missing and therefore, after P, Y should come to form the series.
11. (d) This question is based on the 4 letter row as in questions 1 to 7. In this series, first AC is taken (omitting B) and BD. In the same manner, AG and FH and so on.
12. (d) In the first row between C and S, three letters each are skipped, i.e. C(DEF) G(HIJ) K(LMN) O(PQR) and S. Same pattern is followed in rows A-Q and E- ?
13. (c) A careful analysis of rows A to M reveals that 2, 3, 4, letters are

consecutively skipped. For instance, A (BC) D (EFG), H(IJKL). Same order is followed in other rows C-O, B-N and F-?

14. (d) Study row A-F. Letters are skipped and repeated as follows:

A (BC) D C (DE) F

C (DE) F E (FG) H

E (FG) H G (IJ) K

O (PQ) R Q (RS) T Hence the answer = QT.

15. (b) The series is made by the following scheme:

F (2) I (2) L (2) | O (2) R

E (2) | H (2) K (2) N (2) Q

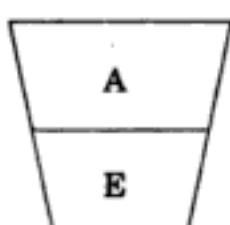
I (2) L (2) O (2) R (2) U

K (2) N (2) Q (2) T (2) W

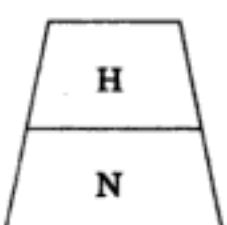
Based on the above scheme, T replaces the ? mark in the question.

Illustrations

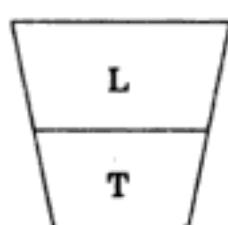
1. Which letter will come in the bottom portion of the last figure?



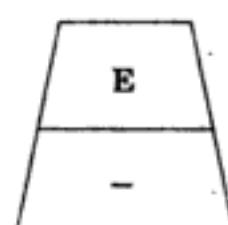
(a) U



(b) V

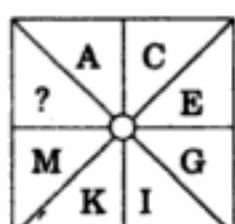


(c) W



(d) O

2. Which letter will replace the question mark in the following design?



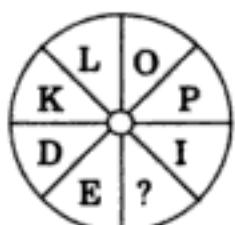
(a) B

(b) W

(c) O

(d) V

3. Which letter will replace the question mark in the following circle?



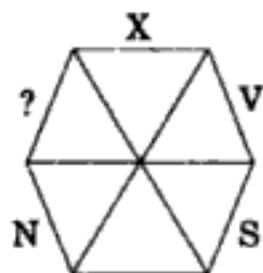
(a) G

(b) U

(c) V

(d) H

4. Which letter will replace the question mark?



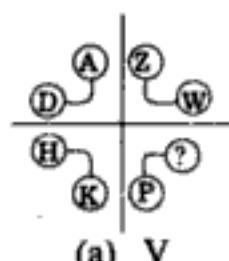
(a) Y

(b) W

(c) L

(d) M

5. Which letter will replace the question mark?



(a) V

(b) Q

(c) S

(d) R

Answers and Explanations

1.(d)O: The interval between the top and the bottom letters in each domino increases by 4, then 6, 8 and finally by 10 steps.
A (BCD) E, H (IJKLM) N, L (MNOPQRS) E (FGHIJKLMNOP) O

2.(c)O: (alternate letters in sequence) A (B) C (D) E (F) G (H) I (J) K (L) M (N) O

3.(d)H: The pattern is KL (MN) OP (top) DE (FG) HI (bottom)

4.(d)L: (skip one letter, then two to form the series).

5.(c)S: (an interval of two letters exists between each quadrant, going clockwise)

Practice Questions

Directions: The following questions are framed on letter sequences. In each part of the series, there is a combination of capital and small letters, with certain letters skipped/and/or repeated. Find the correct answer.

1. ABC abc DEF — ?

(a) ghi

(b) GHI

(c) ABC

(d) def

2. ACF acf G ??

(a) IL gil

(b) JL gil

(c) ILgjl

(d) LL gli

3. ZXV zxv U

(a) ust UST

(b) SQusq

(c) USQO

(d) USRTs

4. accce ACCCE??
(a) GJJJK fjjjk
(c) GIIIK ghhhk

(b) GIIIK giiik
(d) GIIIK Giiik

5. AGMS agms ??
(a) ABCD abcd
(c) BHNT bhnt

(b) BHNT bhnt
(d) bhnt BHNT

6. aa bbb cccc ??
(a) ddjjj
(c) dddddd

(b) dddjj
(e) DDDDDD

7. aB bC cD dE e?
(a) e
(b) f

(c) g
(d) G

8. mNNoPPq ??
(a) rR
(b) qR

(c) RR
(d) rr

9. dd jjj pp vvv b
(a) b
(b) bb

(c) bB
(d) BB

10. AG ms BH nt CI ??
(a) uy
(b) , ou

(c) jk
(d) uo

11. a cc eee
(a) f
(b) ff

(c) gggg
(d) GGGG

12. a f g l m ?
(a) nn
(b) op

(c) R
(d) r

13. bb nn cc oo ??
(a) aa
(b) qq

(c) dd
(d) pp

14. a D g J m P
(a) sp
(b) sP

(c) sW
(d) Sv

15. mm qq -- bb ii
(a) Vv
(b) vv

(c) ST
(d) pp

Answers: Explanation not required. A careful observation and analysis will give correct answers.

- | | | | |
|---------|---------|---------|---------|
| 1. (d) | 2. (a) | 3. (b) | 4. (b) |
| 5. (c) | 6. (c) | 7. (b) | 8. (c) |
| 9. (a) | 10. (b) | 11. (c) | 12. (d) |
| 13. (c) | 14. (c) | 15. (b) | - |

NUMBER SERIES

In number series, instead of letters, numbers or digits are used. Here again, there are no specific rules and by just following the illustrations given here, you will be able to detect the patterns/sequences involved.

Number series require simple manipulation of numbers, for example:

1. Skipping the numbers in some set order.
 2. Addition, subtraction, multiplication or division of numbers to get the next number in the series.
 3. Logical transposition of numbers.
 4. Increase or decrease in numbers in a specific pattern/order.

All you have to do is to determine the pattern followed by careful examination of the numbers in a given row, and the manner of progression.

Illustrations

Directions: Select from the answer choices given under each number series, an appropriate number to replace the question mark and continue the pattern being followed by other numbers in the series.

Answers and Explanations

1.(b)34: The series progresses by adding 5, 7, 9, 11, 13 and so on in successive steps, which gives the next number.

$$2 + 5 = 7, 7 + 7 = 14, 14 + 9 = 23 \text{ and } 23 + 11 = 34$$

2.(d)65: Each term is the sum of the two previous numbers.

3.(c)768: Multiply each term by 4 to get the next number.

4.(d)54: Divide by 2 and multiply by 3 alternately.

5.(c)63: Numbers increase in steps of 2, 4, 8 and so on.

Practice Questions

Directions: Figures given in each question follow a set pattern. Determine the pattern and find the correct answer.

1. 9 15 23 33 ?
 (a) 44 (b) 36 (c) 38 (d) 45

2. 12 8 14 6 16 ?
 (a) 18 (b) 32 (c) 5 (d) 4

3. 9 6 16 10 30 18 ? 34
 (a) 36 (b) 60 (c) 58 (d) 60

4. 68 81 96 ? 132
 (a) 105 (b) 110 (c) 130 (d) 113

5. 2 5 9 ? 20 27
 (a) 48 (b) 12 (c) 14 (d) 24

6. 30 23 17 12 ? 5
 (a) 6 (b) 7 (c) 8 (d) 9

7. 10 18 34 ?? 130 254 258
 (a) 32 (b) 60 (c) 68 (d) 66

8. 18 10 6 4 3 ?
 (a) 8 (b) 4 (c) 3.5 (d) 2.5

9. 6 11 18 27 38 ?? 66
 (a) 58 (b) 54 (c) 51 (d) 59

10. 1 8 27 ?
 (a) 37 (b) 47 (c) 57 (d) 64

11. 4 10 22 46 ??
 (a) 56 (b) 66 (c) 76 (d) 94

12. 4 5 7 ? 19
 (a) 8 (b) 9 (c) 10 (d) 11

13. 5 8 12 17 23 ? 38
 (a) 26 (b) 28 (c) 30 (d) 29

14. 5 9 16 29 54 103 ?

- (a) 102 (b) 94 (c) 103 (d) 200

15. 4 9 20 43 90 ? ?

- (a) 180 (b) 182 (c) 179 (d) 185

Answers and Explanations

1. (d) The series increases by 6, then 8, 10 and finally by 12.
2. (d) Two alternating series increasing in twos from 12 and reducing in twos from 8.
3. (c) Two alternate series, in each of which figures are doubled and the result reduced by 2 to form the next figure.
4. (d) The series increases by steps 13, 15, 17, 19.
5. (c) The interval increases by 1 each time.
6. (c) The interval reduces by 1 each time.
7. (d) Double each figure and subtract 2 each time.
8. (d) Each figure is obtained by adding 2 to the previous one and then dividing it by 2.
9. (c) Square the numbers 2, 3, 4, 5 respectively adding 2 each time.
10. (d) Cube the numbers 1, 2, 3, 4 respectively.
11. (d) Each number is twice the previous one plus 2.
12. (d) Each number is twice the previous one minus 3.
13. (c) Starting from the first figure, double the figure and 3, 4, 5, 6, 7, 8 etc., i.e. increase each time by 3, 4, 5 and so on.
14. (d) Multiply each number by 2 and reduce 1, 2, 3, 4 and so from each figure, $(5) \times 2 = 10 - 1 = 9 \Rightarrow (9) \times 2 = 18 - 2 = 16 \dots$
15. (d) Double each figure and add 1, 2, 3, 4, and so on, e.g. 4 doubled = $8 + 1 = 9$, then 9 doubled = 18, add 2 = 20 and so on.

OTHER FORMATS

Like letter series, number series may also be in different formats. Some illustrations given below will familiarize you with the most common formats of number series appearing in competitive examinations.

Illustrations

Directions: Select from the answer choices given against each question an appropriate number to replace the question mark.

1.

4	3	2	9	8
5	2	?	35	

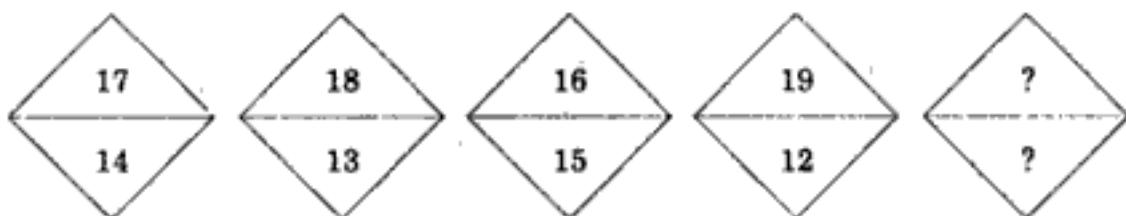
(a) 5

(b) 6

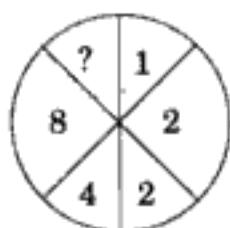
(c) 11

(d) 8

2.

(a) $\frac{20}{13}$ (b) $\frac{21}{25}$ (c) $\frac{15}{16}$ (d) $\frac{17}{18}$

3.



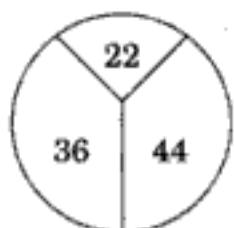
(a) 10

(b) 15

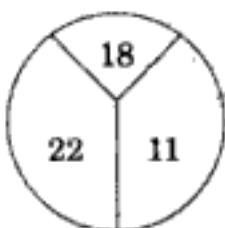
(c) 32

(d) 12

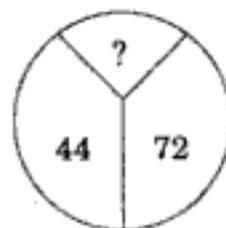
4.



(a) 44



(b) 55



(c) 80

(d) 88

5.

7	21	8
17	?	5
12	1	23

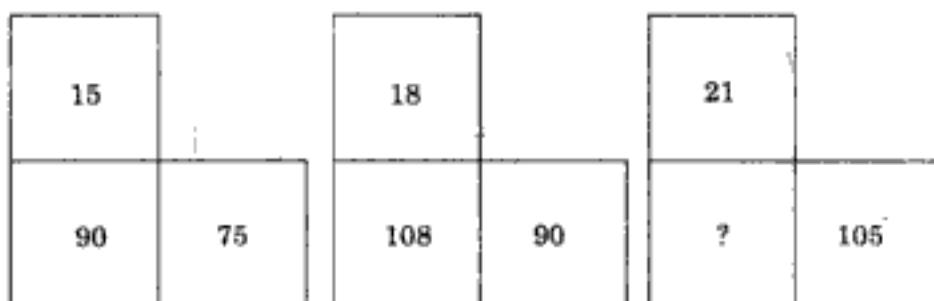
(a) 14

(b) 18

(c) 3

(d) 13

6.



(a) 78

(b) 126

(c) 140

(d) 132

7.

19	25	32
14		?
10		49
7		

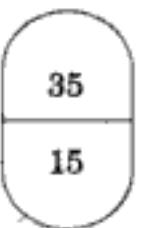
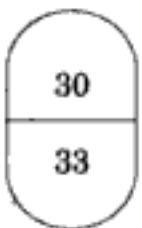
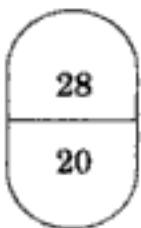
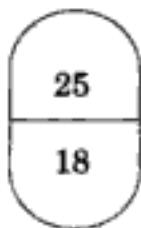
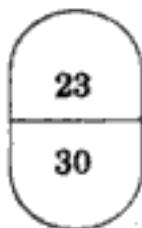
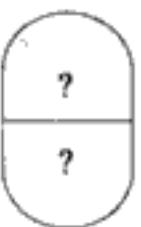
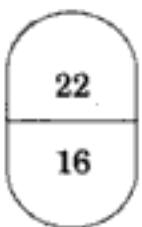
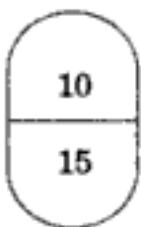
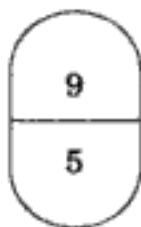
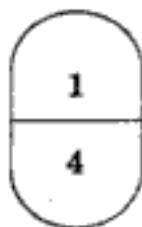
(a) 36

(b) 40

(c) 45

(d) 42

8.



(a)

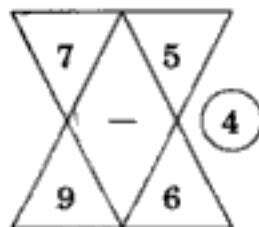
(b)

(c)

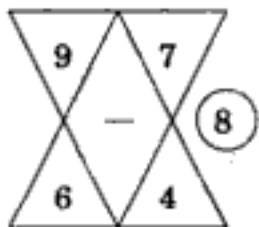
(d)

(e)

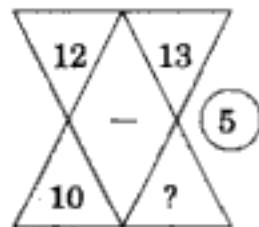
9.



(a) 7



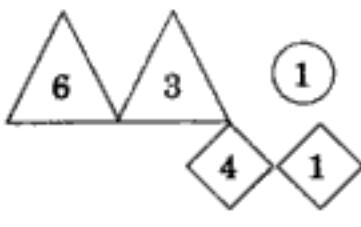
(b) 3



(c) 5

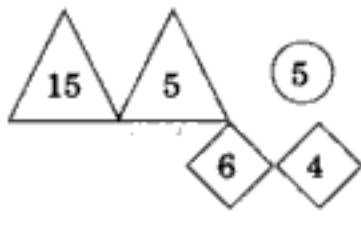
(d) 8

10.



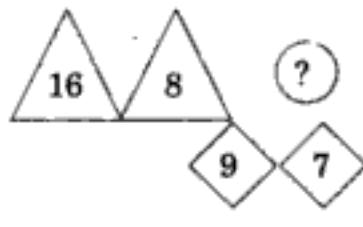
A

(a) 5



B

(b) 6



C

(d) 3

Answers and Explanations

1.(d)8. The terms on the bottom row are formed by taking half the product of those above it and subtracting 1.

2.(c) $\frac{15}{16}$. In the top triangle, the progression is plus 1, minus 2, plus 3, minus 4 and so on.

In the bottom triangle, the progression is minus 1, plus 2, minus 3, plus 4 and so on.

3.(c)32. Each number is obtained by multiplying the preceding number by one that follows:

$$1 \times 2 = 2; 2 \times 2 = 4; 2 \times 4 = 8; 4 \times 8 = 32$$

- 4.(d)88. The numbers in the second circle are those of the first divided by 2. Those in the third circle are those of the first multiplied by 2.

5.(a)14. The sum of all the numbers in the squares (rows & columns) added together is 36.

6.(b)126. The bottom left number is bottom right number plus top number, i.e. $105 + 21 = 126$.

7.(b)40. The series increases by 3, 4, 5, 6, 7, 8 and 9.

8.(a) $\frac{23}{30}$. The series goes alternately from top to bottom. That starting on 1 increases by 4, 5, 6 and 7; that from 4 by 5, 6, 7 and 8.

9.(c) The sum of the top numbers divided by the difference between the bottom numbers, gives the figure in the circle.

10.(c)4. Divide the difference between the triangles by the difference between the diamonds to get the number in the circle.

LETTER-NUMBER MIXED SERIES

In another type of series, both letters of alphabet as well as numerical digits are used. These series are also formed on similar patterns as individual letter and number series explained earlier.

Illustrations

Directions: Choose from the answer choices an appropriate number-letter pair to replace the question marks (?)

Answers and Explanations

1. (c) K-6 The letters have a gap of one letter. The numbers increase by one each time.

2. (d) P-16 Here the relation between letters and numbers is the position number of the letter in alphabetic order. Letters follow the sequence of D (EF)

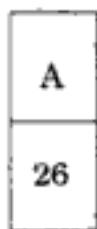
G (HI) J (KL)M (NO)P and numbers represent their position numbers in the alphabetic order.

3. (d) L-16 Here the numbers represent the position of the alphabet as in reverse sequence, i.e. Z = 1, Y = 2.... The letters have a gap of one letter, that is, D (E) F (G) H (I) J and so on.
4. (c) Y-25 Letters follow the sequence of plus 1, 2, 3, 4, that is, K (L) M (NO) P (QRS) T (UVWX) Y and the numbers represent their respective alphabetic position.
5. (d) O¹⁵ Letters follow the sequence C (DE) F (GH) I (JK) L (MN) O and the numbers are their' alphabetic position number.

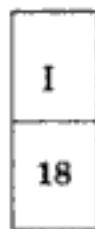
OTHER PATTERNS

Directions: In the following questions, select from the answer choices an appropriate letter-number pair to replace the question marks and continue the series.

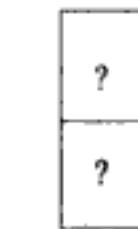
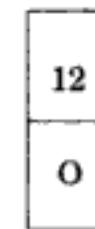
1.



(a) $\frac{13}{P}$



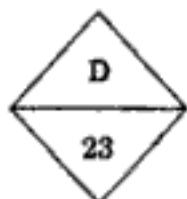
(b) $\frac{15}{Q}$



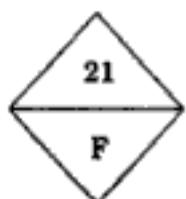
(c) $\frac{U}{6}$

(d) $\frac{6}{U}$

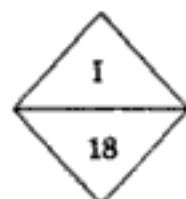
2.



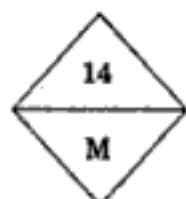
(a) $\frac{S}{10}$



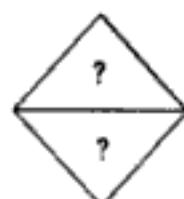
(b) $\frac{3}{X}$



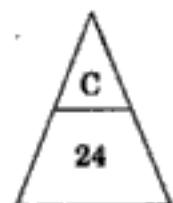
(c) $\frac{U}{4}$



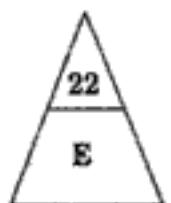
(d) $\frac{6}{U}$



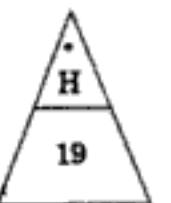
3.



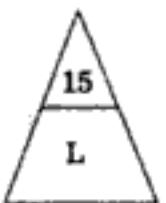
(a) $\frac{15}{R}$



(b) $\frac{4}{W}$

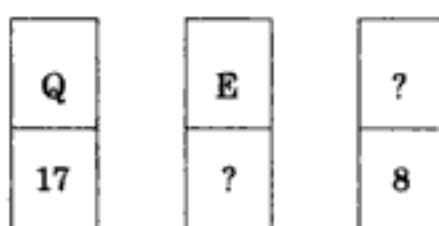
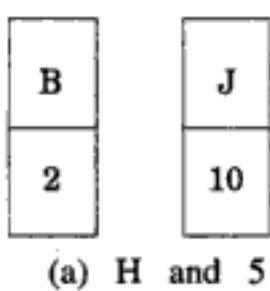


(c) $\frac{S}{11}$

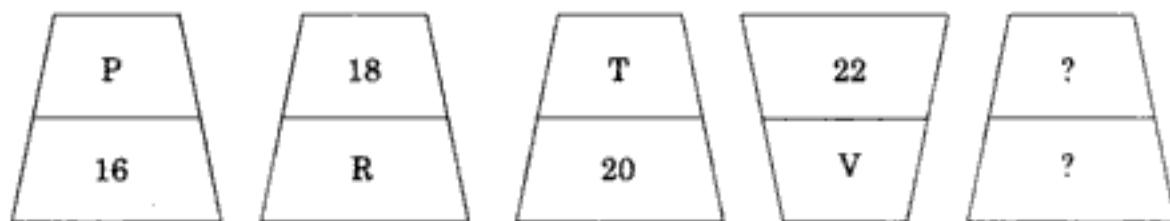


(d) $\frac{4}{X}$

4.



5.



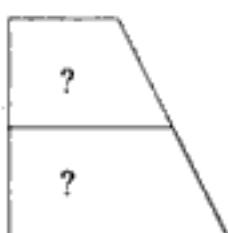
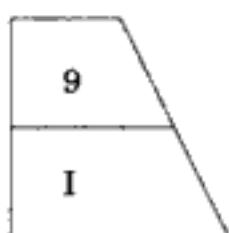
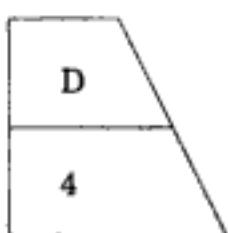
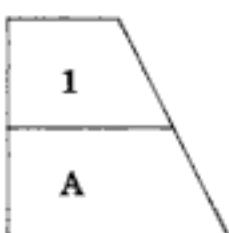
(a) $\frac{U}{15}$

(b) $\frac{W}{23}$

(c) $\frac{X}{24}$

(d) $\frac{W}{24}$

6.



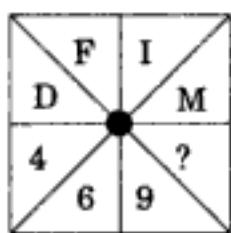
(a) $\frac{J}{10}$

(b) $\frac{M}{13}$

(c) $\frac{P}{16}$

(d) $\frac{P}{11}$

7.



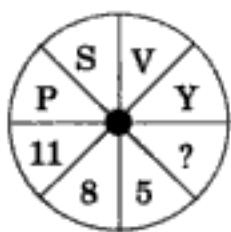
(a) 10

(b) 13

(c) 12

(d) 14

8.



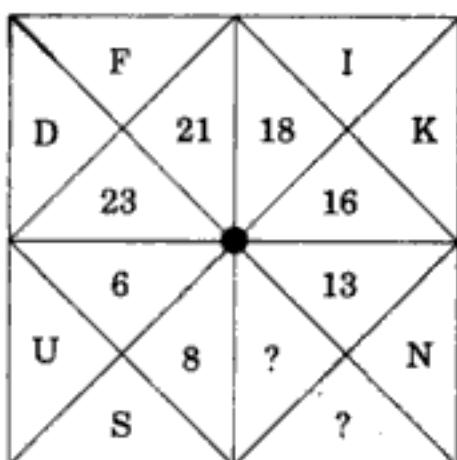
(a) 3

(b) 7

(c) 2

(d) 3

9.



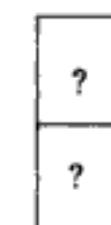
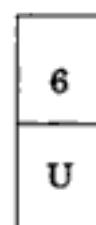
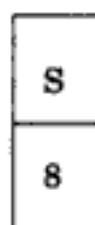
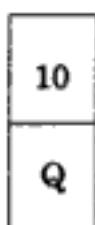
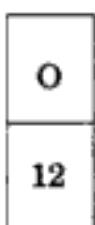
(a) 9/R

(b) 11/P

(c) 13/Q

(d) 10/V

10.



(a) Y and 25

(b) 2 and Y

(c) X and 2

(d) 24 and X

Answers and Explanations

- 1.(c) $\frac{U}{6}$. The vowels move from the numerator to the denominator. The numbers are their respective positions in the backward sequence of alphabets, that is, Z = 1, A = 26, E = 22, I = 18, O = 12, U = 6.
- 2.(b) $\frac{3}{X}$. Letters move from numerator to denominator, and have gaps of -1, -2, -3, -4, -5, and -6, that is, D (E) F (GH) I (JKL) M (NOPQ) R (STUVW) X. The numbers are their position numbers backwards, that is, D = 25, F = 21, I = 18, M = 14, R = 9, X = 3.
- 3.(b) $\frac{4}{W}$. The letters move from the numerator to the denominator. Each successive letter is obtained by skipping 1, 2, 3, 4 and 5 letters. The numbers represent their position numbers in backward sequence.
- 4.(d) 5 and H. The numbers represent the position in the alphabetical system of the letters above. It is not (a) because number will come first and alphabet next.
- 5.(c) $\frac{X}{24}$. The letters follow the sequence P (Q) R (S) T (U) V (W) X and the numbers represent their positions in the alphabetical system.
- 6.(c) $\frac{P}{16}$. The numerical sequence is formed by the squares of 1, 2, 3, and 4. The numbers also mark the position in the alphabetical system of the letters A, D, I and P.
- 7.(b) 13. The letters on the top portion of the square follow the sequence D (E) F (GH) I (JKL) M and the numbers represent their alphabetic position.

- 8.(c)2. The letters in the upper half of the circle follow the sequence P (QR) S (TU) V (WX) Y and the numbers represent their respective positions in backward sequence.
- 9.(b)11. ^PThe letters progress in clockwise position starting from D and the next letter is obtained by following the skipping pattern: D (E) F (GH) I (J) K (LM) N (O) P (QR) S (T) U. The numbers are their positions in backward order.
- 10.(b)²_Y The letters follow the skipping pattern O (P) Q (R) S (T) U (V) W (X) Y. The numbers represent their alphabetic positions in backward sequence.

TYPE 2: VERBAL CLASSIFICATION

These questions test your ability to observe differences and similarities among various items. Verbal classification, also known as Odd man out test, consists of five or six terms or words. Of the given terms, one is different from the others. In other words, except one item or term, all others have some sort of similarity. You have to identify the item that is different from the rest, or is the odd man out. First, you have to determine the similarity of characteristics in the given terms and then identify the one which does not have the same characteristics. Verbal classification questions usually comprise:

- (a) Letter Classification
- (b) Number Classification
- (c) Word/item Classification

Letter Classification

Here you are given letters of alphabet in groups or individual letters. You have to identify the letters or group of letters that is different from the other given terms. This may include:

- (i) Relationship based on position of letters
- (ii) Small and capital letter relationship
- (iii) Vowel and consonant relationship
- (iv) Repetition and skipping pattern relationship
- (v) Letter formation relationship

Illustrations

Directions: In each of the following questions, letters/group of letters are given. While four of them have some similarity, one is different from the rest. Find the odd man out.

	(a)	(b)	(c)	(d)	(e)
1.	BD	CE	DF	EG	FG
2.	AZ	BY	CX	DU	EV
3.	Ace	FgH	Kmo	Oqs	Tvx
4.	AbcdE	IfghO	ApqrL	UlmnE	EwxyO
5.	W	X	V	T	B
6.	P	D	B	T	R

Answers and Explanations

- 1.(e) FG. Every second letter is taken to make the pairs. In (e), this relationship does not exist.
- 2.(d) DU. Each pair consists of one letter from the beginning and one letter from the end, except in (d).
- 3.(b) FgH. Each group has one capital letter and two small letters and in between each letter, one letter is skipped, e.g. A (b) c (d) e and so on except in (b) where there are two capital letters.
- 4.(c) ApqrL. Each group of letters consists of two vowels, one each in the beginning and in the end. In between two vowels, three letters in alphabetic sequence are given. In (c), there is only one vowel.
- 5.(e) B. All letters are formed by straight lines, except B, which has a straight line and two curves.
- 6.(d) T. All letters are formed by both straight lines and curves, except T, which is formed of only straight lines.

Practice Questions

Directions: In each of the five groups of letters, one is different from others. Tick the odd one out.

- | | | | | |
|-------------|----------|----------|----------|----------|
| 1. (a) aBC | (b) BaC | (c) abC | (d) BCa | (e) CBa |
| 2. (a) KMpS | (b) BKXz | (c) PiMO | (d) PHet | (e) OIsT |
| 3. (a) LNMO | (b) APBQ | (c) EUFV | (d) GWHX | (e) CRDT |
| 4. (a) PaKe | (b) PiuS | (c) PoKe | (d) PoeK | (e) PrtK |
| 5. (a) SSTO | (b) TTOU | (c) OOTU | (d) USTO | (e) UUTS |
| 6. (a) BATU | (b) ZYST | (c) SMPQ | (d) FEGH | (e) IJSO |

7. (a) aabC (b) ccdE (c) eefG (d) ffiH (e) gghI
 8. (a) TSRQ (b) MLKJ (c) YXWV (d) NMLK (e) HGFD
 9. (a) abcD (b) EFgh (c) RStu (d) MNop (e) IJkl

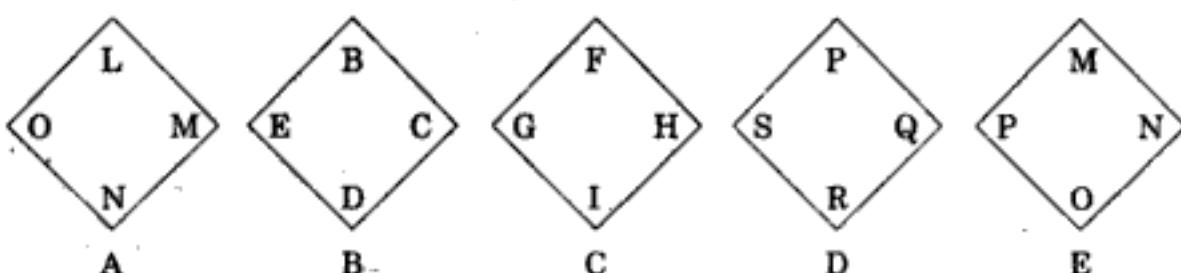
Answers and Explanations

- (c) In this, there are 2 small letters. In others, only one letter is small.
- (d) In this group, there are 2 small letters whereas in others, there is only one small letter.
- (e) Each set has an alternate letter relation, but in (e) it should be either CRDS or CSDT
- (e) All have two vowels in small letters whereas (e) has no vowel at all.
- (d) In all others, the first two letters are the same.
- (e) In all others, the first two letters are consecutive in alphabet from backward order, i.e. BA, CD etc.
- (d) In all others, the first two letters are repeated followed by one small and one capital letter, maintaining the alphabetic sequence.
- (e) Preceding letter of the first occupies the 2nd position and one preceding the 2nd occupies the 3rd position and the one preceding the 3rd occupies the 4th place.
- (a) Starts with two small letters whereas all other end in two small letters.

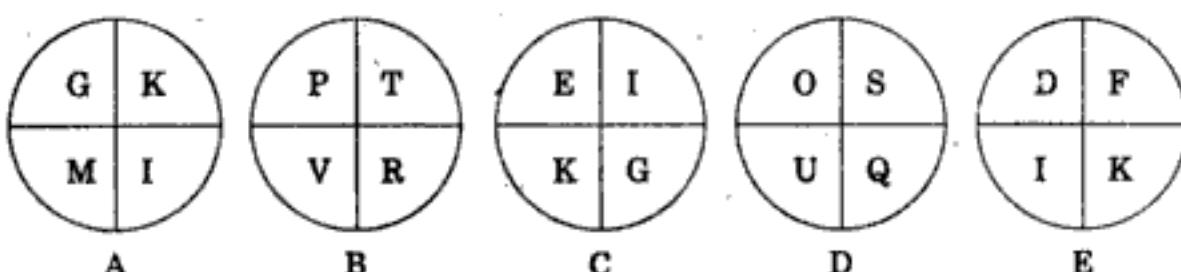
OTHER FORMATS

Letter classification questions may be given various other formats as illustrated below.

1. Which block contains letters in a different order?



2. Which of the following circles contains letters in a different order?



ANSWERS:

1. (c) In all other blocks, letters are in alphabetic sequence moving anticlockwise, except in (c).
2. (e) In all other circles, letters in opposite diagonal positions, starting from top left, are in alphabetic order with one letter skipped in between, except in (e). G (h) I (j) K (l) M; P (q) R (s) T (u) V; E (f) G (h) I (j) K; O (p) Q (r) S (t) U. This sequence is not found in circle (e).

Practice Questions

Directions: Here are 5 groups of letters. Four of them are alike in some way or the other while one is different (odd). Tick-mark the one which is different from others

- | | | |
|--------------------|-----------------|-----------------|
| 1. (a) aB EF ij | (b) bC FG jk | (c) pQ TU yz |
| (d) tU XY bc | (e) gH KL op | |
| 2. (a) bb DEF H | (b) cc EFG I | (c) aa CDE G |
| (d) gg IJK M | (e) ff Hij L | |
| 3. (a) aaa b FG | (b) bbb c GH | (c) hhh i MN |
| (d) ddd c HI | (e) fff g KL | |
| 4. (a) zyx abc | (b) wvu dee | (c) tsr ghi |
| (d) qpo jkl | (e) pon mno | |
| 5. (a) abc FGH | (b) bcd GHI | (c) def IJK |
| (d) uvw ZAB | (e) nmo RST | |
| 6. (a) hi KLM | (b) op STU | (c) ab EFG |
| (d) bc FGH | (e) lm PQR | |
| 7. (a) aa cc ee gg | (b) cc ee gg ii | (c) dd ff hh ll |
| (d) mm oo qr tt | (e) oo qq st vv | |
| 8. (a) abcd HI | (b) opqr VW | (c) xyza EF |
| (d) cdef JK | (e) tuvw YZ | |
| 9. (a) aabb ffgg | (b) ffgg kkll | (c) kkll ppqq |
| (d) ppqq uuVv | (e) uuvv zzaa | |
| 10. (a) aaAA eeFF | (b) ppQQ uuVV | (c) llMM qqRR |
| (d) rrss wwXX | (e) ooPP ttUU | |

Answers and Explanations

1. (c) End letters should have been XY, because the scheme followed is aB(cd)EF(gh)ij. Letters in brackets show a skipping pattern. This applies to all questions.
 2. (e) All middle letters should be capital as per other group of letters.
 3. (d) End letters should be IJ. The scheme is aaab(cde)FG.
 4. (b) End letters should be 'def'. The scheme is zyx and abc, i.e. 3 letters from end of the alphabet and 3 letters from the beginning, maintaining the alphabetic order.
 5. (e) It should have been mno (pq) RST.
 6. (c) There should be two missing alphabets between the small letters and capital letters op (QR) STU ab (CD) EFG etc.
 7. (c) End letters should have been "jj" instead of "ll".
 8. (e) End letters should have been AB instead of YZ. Follow a circular continuation of alphabets.
 9. (d) In place of capital V, small v should be there. The scheme is aabb (cde) ffgg.
 10. (d) In the first term "ss" should be in capitals "SS".
 11. (c) Correct letter grouping is: ooo (pqr)sss(tuv)www.
 12. (e) In the end, in place of "ttt" there should be "uuu". The scheme of skipping letters is ccc(def)ggg(hij)kkk.
 13. (d) One initial and one final letter is capital in all others.
 14. (d) Correct answer should be "ooo qqq TT", i.e. both T's capital.
 15. (e) Correct answer = tuv xyz. The scheme is bed(e)fgh.

NUMBER CLASSIFICATION

Here in place of letters, numbers/group of numbers are used and you have to identify the number/group of numbers that is different from the rest.

Illustrations

	(a)	(b)	(c)	(d)	(e)
1.	6	18	12	3	7
2.	515	875	380	590	876
3.	579	885	696	398	876
4.	11	13	17	19	39
5.	539	638	730	731	751
6.	124	235	789	510	346

Answers and Explanations

1. (e) 7. All other numbers are divisible by 3, except 7.
 2. (e) 876. All other numbers are divisible by 5, except 876.
 3. (d) 398. All other digits in each group when totalled up, the sum obtained is 21. In (d) the sum obtained is 20.
 4. (e) 39. All others are prime numbers (they can only be divided by themselves and by 1).
 5. (e) 751. All other groups have digit 3 in common in the centre.
 6. (d) 510. Figures in each group are in increasing order, whereas in (d) they are in decreasing order.

Practice Questions

Directions: Out of the following five numbers or sets of numbers (a-e), one does not belong to the same classification (category). All others resemble each other in one way or the other. You have to find the odd one out.

5. (a) 315 (b) 207 (c) 711 (d) 423 (e) 325

6. (a) 3, 7, 5, 11 (b) 11, 17, 19, 23 (c) 3, 29, 7, 5
(d) 3, 11, 13, 3 (e) 2, 4, 3, 5, 7

7. (a) 14 (b) 7 (c) 28 (d) 21 (e) 36

8. (a) 63852 (b) 52638 (c) 85362 (d) 28365 (e) 28751

9. (a) 3795 (b) 9359 (c) 5937 (d) 7355 (e) 3745

10. (a) 11,3,3,17 (b) 41,5,3,47 (c) 71,7,3,17 (d) 37,14,19,7 (e) 67,71,3,5

11. (a) 35, 24 (b) 79,68 (c) 57,46 (d) 87,68 (e) 35,79

12. (a) 67, 19 (b) 71, 11 (c) 41, 19 (d) 61, 15 (e) 89, 41

13. (a) 5,13,17 (b) 29,1,5 (c) 17,17,1 (d) 13,17,5 (e) 15,15,5

14. (a) 65, 83 (b) 83,47 (c) 34,79 (d) 65, 23 (e) 45, 67

15. (a) 3535 (b) 7595 (c) 9575 (d) 7397 (e) 3579

16. (a) 49 (b) 140 (c) 98 (d) 77 (e) 97

17. (a) 98765 (b) 98767 (c) 987654 (d) 9876543 (e) 98765432

18. (a) 37037×3 (b) 37037×6 (c) 37037×12
(d) 37037×9 (e) 37037×4

19. (a) 121 (b) 12321 (c) 123421 (d) 123454321 (e) 12345654321

20. (a) 876321 (b) 387316 (c) 349416 (d) 31896 (e) 372164

21. (a) 6 (b) 18 (c) 12 (d) 3 (e) 7

22. (a) 18 (b) 6 (c) 12 (d) 18 (e) 9

23. (a) 7 (b) 17 (c) 37 (d) 5 (e) 9

24. (a) 14 (b) 28 (c) 21 (d) 41 (e) 35

25. (a) 24 (b) 12 (c) 36 (d) 27 (e) 48

Answers and Explanations

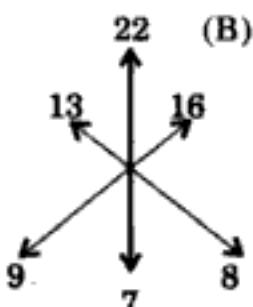
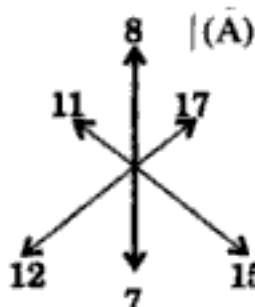
- (e) Not divisible by 2
 - (e) Not divisible by 3
 - (d) Not divisible by 2

4. (e) Others total up to 8; $(5 + 2 + 1 + 6 + 3) = 17 \Rightarrow (1 + 7) = 8$ except (e) which is 7.
5. (e) Others total up to 9 ($3+1+5 = 9$) except (e).
6. (e) Others are prime numbers. In (e), 4 is present which is non prime.
7. (e) Others are all divisible by 7.
8. (e) All contain the same digits except (e), (Same digits = 23568).
9. (e) All are odd numbers, except (e) which has 3 odd and one even number.
10. (d) All contain prime number sets, except (d) which has 14, a non-prime number.
11. (e) Each 2 figure set consists of 2 odd numbers (initially) and 2 (even numbers finally) while (e) contains only odd nos.
12. (d) All are pairs of 1 prime and 1 odd number while (d) contains only prime numbers.
13. (e) Totals of all are 15. Sets (a) to (d) consistsof prime numbers only but (e) which also totals up to 15, consists of odd numbers.
14. (c) Pairs of odd and prime numbers. First odd number followed by prime numbers in all (a), (b), (d), (e). In (c), the pair of odd and prime numbers is opposite.
15. (a) In all other options digits 7 and 9 are present.
16. (e) All are products of multiplication of a figure by 7.
 $7 \times 7 = 49$, $7 \times 20 = 120$, $7 \times 14 = 98$, $7 \times 13 = 91$.
17. (b) All figures go on increasing backward and decreasing forward.
18. (e) Products of (a) to (d) are all uniform figures except for (e). (a) 111111
(b) 222222 (c) 333333 (d) 444444.
19. (c) Numbers read the same backward and same forward in all other cases.
20. (e) All others total up to 27 except(e) which totals up to 23.
21. (e) All others are divisible by 3.
22. (e) All others are divisible by 2.
23. (e) All others are prime numbers.
24. (d) All others are multiples of 7.
25. (d) In all, the second integer is the double of the first, e.g. in
(c) $36 = 3 \times 2 = 6$.

OTHER FORMATS

Number classification questions may be given various other formats as illustrated below.

1. Study the relationship of numbers in (A), which have a set pattern. In (B), one of the numbers is odd, which makes the relationship among figures in (B) different from those in (A):



- (a) 22 instead of 13 (b) 10 instead of 7 (c) 8 instead of 16
 (d) 13 instead of 16 (e) 16 instead of 7.

2. Which block consists of numbers that are different from numbers given in other blocks.

1	3
---	---

A

5	7
---	---

B

11	13
----	----

C

15	30
----	----

D

17	19
----	----

E

3. Which square contains a number that does not fit in the series with other numbers?

10	11	16
8		19
5		32
4		36

(a) 5

(b) 11

(c) 19

(d) 10

4. Which block contains numbers that do not belong to the series or is an odd man in the sequence?

1	3
---	---

A

5	7
---	---

B

9	11
---	----

C

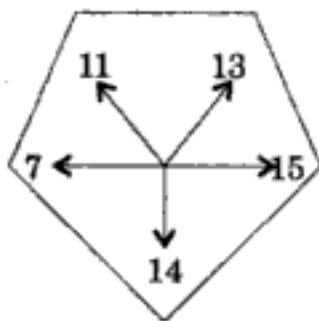
13	15
----	----

D

12	16
----	----

E

5. Which number in the following figure is different from the rest?



(a) 7

(b) 11

(c) 13

(d) 15

(e) 14

Answers and Explanations

1. (b) 7. Studying the numbers in (A) reveals that the numbers are obtained by adding together the three exterior numbers and subtracting the two interior numbers.
 $(8 + 12 + 15) - (11 + 17) = 7$ (A)
 Therefore, in (B) also, it should be
 $(22 + 9 + 8) - (13 + 16) = 10$
 There should be 10 at the bottom instead of 7.
2. (d) $\frac{15}{30}$. In other blocks there are prime numbers they can only be divided by themselves and 1. In block (D) there are numbers (15 and 30) which are not prime numbers. They are divisible by themselves and 1, 3 and 5.
3. (b) 11. The numbers start from 4 in clockwise direction in each row starting from the bottom square. The order is plus one, double the first figure; plus two, double the third figure; plus three, double the next figure plus 4.
4. (e) $\frac{12}{16}$. The other blocks form a series by adding two to the first number to obtain the second number in every block.
5. (e) 14. All others are odd numbers, except (e) 14.

WORDS/ITEMS CLASSIFICATION

In this type of question, you are given a group of five or six words/items, which have some sort of similarity among themselves. One of the items does not belong to the group. Identify the one that is odd.

Illustrations

Directions: Select from the following groups, the word that does not belong to the group or is different from the rest.

1. (a) Nickel (b) Tin (c) Steel (d) Iron (e) Copper
2. (a) Squash (b) Pumpkin (c) Tomato (d) Cucumber (e) Corn
3. (a) Dictionary (b) Biography (c) Atlas (d) Directory (e) Almanac
4. (a) Touch (b) See (c) Hear (d) Eat (e) Smell
5. (a) Artist (b) Golfer (c) Newscaster (d) Dancer (e) Mechanic
6. (a) Water (b) Sun (c) Gasoline (d) Wind (e) Cement

Answers and Explanations

1. (c) Steel. The others are simple metals. Steel is an alloy (combination of two or more metals).
2. (e) Corn. The others grow on vines. Corn grows on a stalk.
3. (b) Biography. All the others are reference books. A biography is a narrative.
4. (d) Eat. The others are senses. Eating is a body function.
5. (c) Newscaster. All the others must use their hands and body but not words to perform their jobs.
6. (e) Cement. The others can all be used as sources of producing energy.

Practice Questions

Directions: In each of the following questions, there are five choices (a-e). Four of them are alike and one different. Find the odd man out.

1. (a) Father (b) Mother (c) Sister (d) Mother-in-law
(e) brother
2. (a) Sunday (b) Monday (c) Holiday (d) Friday (e) Saturday
3. (a) Truthful (b) Sly (c) Virtuous (d) Pensive (e) Cowardly
4. (a) Cricket (b) Chess (c) Hockey (d) Football (e) Volleyball

5. (a) Chair (b) Sofaset (c) Carpet (d) Bench (e) Stool
6. (a) Tiger (b) Leopard (c) Fox (d) Wildcat (e) Cougar
7. (a) Furnace oil (b) Mobil oil (c) Petrol (d) Diesel (e) Kerosene oil
8. (a) Flew (b) Sailed (c) Travelled (d) Rode (e) Walked
9. (a) Wife (b) Male (c) Female (d) Husband (e) She
10. (a) Explain (b) Instruct (c) Teach (d) Train (e) Educate
11. (a) Oxygen (b) Hydrogen (c) Carbon-dioxide (d) Nitrogen
(e) LPG
12. (a) Boy (b) Cow (c) Bow (d) Dew (e) Out
13. (a) Time (b) Room (c) Person (d) Reason (e) Object
14. (a) Three-wheeler (b) Taxi (c) Bus (d) Tanker (e) Car
15. (a) Violet (b) Green (c) Red (d) White (e) Gold
16. (a) Parallelism (b) Analogy (c) Similar (d) Likeness (e) Distinct
17. (a) Mars (b) Jupiter (c) Mercury (d) Challenger (e) Neptune
18. (a) Letter (b) Box (c) Book (d) Pot (e) Orange
19. (a) London (b) Moga (c) Delhi (d) Bombay (e) Calcutta
20. (a) Eye (b) Ear (c) Eat (d) Oats (e) Nose
21. (a) Booking (b) Bang (c) Looking (d) Making (e) Leaking
22. (a) Fear (b) Fair (c) Peel (d) Poor (e) Hole

Answers and Explanations

1. (d) The others form part of a normal nuclear family.
 2. (c) Others are names of days of the week.
 3. (d) This refers to mood. Others refer to character traits.
 4. (b) Is an indoor game.
 5. (c) Is a floor spread. Others are objects to sit on.
 6. (c) Others belong to the cat family.
 7. (b) Others are fuels.
 8. (c) Others are specific ways of travelling.

9. (d) All end in vowel "E".
 10. (a) Except this, all imply the presence of students.
 11. (e) All others are naturally occurring gases.
 12. (e) All others have one vowel whereas 'Out' has 2 vowels.
 13. (b) All are answers to questions who, what, when, where except room which is non-generic.
 14. (d) Others are to carry passengers.
 15. (e) Others are names of colours. Note the word here is 'Gold' and not 'Golden'.
 16. (e) All others are synonyms except (e) which is an antonym.
 17. (d) All others are names of planets.
 18. (e) All letters end in a consonant but (e) ORANGE ends in a vowel.
 19. (e) All words contain 2 vowels except (e) which contains 3.
 20. (e) All start with vowels except (e) NOSE which starts with a consonant.
 21. (b) All have the same suffix (ING) except(b) BANG.
 22. (e) All have 2 vowels together in the middle except (e) which no doubt has two vowels but with an intervening letter.

How to Tackle Words/Items Classification Question

There are several basic relationships that could exist between words (also see section on Words Analogy). For example:

- (i) Relationship based on meaning
 - (ii) Inter-relationship of words
 - (iii) Word-consistency relationship
 - (iv) Word formation relationship
 - (v) Functional relationship

You have to determine the relationship among the given words and then identify the odd word/item, i.e. the one that does not have the same relationship as the other choices in the question. The following illustrations will help to clarify.

Practice Questions

- 1.** (a) Handle (b) Chain (c) Chain-cover (d) Spokes
(e) Cycle

2. (a) Iron (b) Silver (c) Zinc (d) Copper (e) Brass

3. (a) Ohm (b) Pascal (c) Volt (d) Watt (e) Metre

4. (a) Lead (b) Mercury (c) Antimony (d) Chromium (e) Cast iron

5. (a) Sign of plus (b) Sign of minus (c) Sign of Multiplication
(d) Sign of equal to (e) Sign of therefore

6. (a) oxygen (b) Hydrogen (c) Carbondioxide
(d) Hydrogen-peroxide (e) Nitrogen

7. (a) Water (b) Sulphuric acid (c) Nitric acid
(d) Hydrochloric acid (e) Mercury

8. (a) Moon (b) Saturn (c) Venus (d) Earth (e) Mercury

9. (a) September (b) November (c) October (d) December (e) January

10. (a) Africa (b) Australia (c) Asia (d) Europe (e) Sri Lanka

11. (a) Inch (b) Foot (c) Yard (d) Meter (e) Quart

12. (a) Litres (b) Grams (c) Kilograms (d) Tonnes (e) Quintal

13. (a) Square inch (b) Square foot (c) Square yard (d) Mile
(e) Acre

14. (a) Cubic metres (b) Cubic centimetre (c) Litres (d) Gallons
(e) Square metres

15. (a) Thunder (b) Clouds (c) Rain (d) Lighting (e) Rice

Answers and Explanations

1. (e) Others are parts of a cycle.
 2. (e) Others are metals. Brass is an alloy.
 3. (e) Others are units to measure abstract items.
 4. (e) All others are pure metals.
 5. (e) In other signs, lines are used. In this sign, dots are used.
 6. (d) This is a gas in liquid form. Others are vapours.
 7. (e) All liquids make the surface wet except mercury.
 8. (a) Moon is a satellite. Others are planets.
 9. (e) Other names of months end in 'ber' except January.
 10. (e) Others are continents, except (e) which is a country.
 11. (e) This unit measures liquids while others are for length measurement.
 12. (a) This measures volumes, others measure weight.
 13. (d) Others measure area, (d) measures length.

14. (e) Other measures volume, (e) measures area.
 15. (e) Others are rain related phenomena.

Illustrations

1. (a) Different (b) Separate (c) Distinct (d) Similar (e) Distinguishable

ANSWER: (d) Similar. All the others are synonyms, i.e. relationship based on their meanings.

2. (a) Pluto (b) Jupiter (c) Neptune (d) Mercury (e) Moon

ANSWER: (e) Moon. All others are planets, while Moon is a satellite of Earth (inter-relationship).

3. (a) Torch (b) Where (c) Based (d) Force (e) Course

ANSWER: (e) Course. All other words consists of five letters, except course, which has six letters (words consistency relationship).

4. (a) Typewriter (b) Lead pencil (c) Note book (d) Ballpoint pen (e) Fountain pen

ANSWER: (c) Note book: All others are instruments used for writing, except (c) (functional relationship).

5. (a) Roller (b) Space-bar (c) Keyboard (d) Tab-set (e) Typewriter

ANSWER: (e) All others are parts of a typewriter (part-whole relationship).

Practice Questions

1. (a) Coal (b) Furnace oil (c) Mustard oil (d) Petrol
 (e) Cowdung

2. (a) Quality (b) Quantity (c) Qualify (d) Educated (e) Beauty

3. (a) Teacher (b) Cheer (c) Greater (d) Cheater (e) Create

4. (a) Igloo (b) Kothi (c) Bungalow (d) Flat (e) Showroom

5. (a) Note book (b) Copy (c) Diary (d) Paper (e) Typewriter

6. (a) Sit (b) Hit (c) Kit (d) Fit (e) Knit

7. (a) Devnagri (b) Ashu Lipi (c) Sanket Lipi (d) Shorthand (e) Shorterhand

8. (a) Zeal (b) Seal (c) Kneel (d) Feel (e) Heel

9. (a) U.P. (b) H.P. (c) M.P. (d) A.P. (e) Chandigarh

10. (a) April (b) May (c) July (d) August (e) January

11. (a) September (b) October (c) November (d) December (e) July

12. (a) Keyboard (b) Roller (c) Tab-set (d) Typeface (e) Typewriter
13. (a) Iron (b) Copper (c) Silver (d) Zinc (e) Mercury
14. (a) Fixed (b) Times (c) Males (d) Homes (e) Roof
15. (a) Colours (b) Green (c) Orange (d) Blue black (e) Pink

Answers and Explanations

- (c) Others are fuels.
- (d) All have 3 vowels, except(d) which has 4. Alternately, all end in 'y' while (d) ends in 'ed'.
- (c) All words can be formed from letters of the word 'Teacher'
- (c) Others are dwelling places.
- (e) Others are things to write on or into where as typewriter is a device to write or type.
- (c) Kit is a noun. Others are verbs.
- (a) Others are scripts. This is a language.
- (c) Word having 5 letters.
- (e) Others are states.
- (a) It is the month having 30 days. The others have 31.
- (c) Others end in "ber".
- (e) Others are parts of a typewriter.
- (e) It is a Metal in liquid form, others are solid.
- (e) All words consist of: Consonant-vowel-consonant-vowel- consonant.(e)
Has two vowels in the middle and one consonant each in the beginning and end.
- (a) Others are names of colours.

TYPE 3: VERBAL ANALOGY

In such questions, you will be presented with a pair of words, letters, groups of letters, numbers or groups of numbers. From the answer choices, you need to select the choice that best matches the relationship existing between the first two words, letters or numbers.

The given pair of words, letters or numbers is set off by a colon or ratio sign (:). The colon is merely a kind of code or symbol which signifies that word A is related to word B. The double colon (:) that separates the given pair stands

for "in the same way as". For example:

Dark : Light :: ?

- | | |
|---------------------|--------------------|
| (a) Thin : Slim | (b) Stout : Strong |
| (c) Germs : Disease | (d) Hot : Cold |
| (e) Candle : Bulb | |

ANSWER: (d) In the above example, the answer is (d) Hot : Cold because Hot is related to Cold in the same way as Dark is related to Light. In other words, the two words are antonyms.

Practice Questions

Directions: In each of the following questions, you are given a related pair of words (question pair) in capital letters. Each capitalised pair is followed by five pairs of words. Choose the pair from the answer choices (A-E) that best expresses the relationship similar to that expressed by the question pair.

1. EDITOR : MAGAZINE

- | | |
|-----------------------------|---------------------|
| (a) Novel : Writer | (b) Poem : Poet |
| (c) Chair : Carpenter | (d) Director : Film |
| (E) Psychiatrist : Neurotic | |

2. DETERIORATION : RUST

- | | |
|--------------------------------|-------------------------------|
| (a) Iron : Water | (b) Emaciation : Debilitation |
| (c) Depression : Unemployment | (d) Recession : Inefficiency |
| (e) Promulgation : Legislation | |

3. INTELLIGENSIA : ELITIST

- | | |
|--------------------------------|----------------------------|
| (a) I.Q. : Intelligent | (b) Outershell : Sea-shell |
| (c) Rabble : Plebeian | (d) Gentry : Public |
| (e) Commonality : Common class | |

4. TEDIOUS : BORING

- | | |
|------------------------------|------------------------------|
| (a) Boor : Qafish | (b) Pressing : Crushing |
| (c) Poor : Poverty | (d) Incorngrous : Consistent |
| (e) Indefatigable : Untiring | |

5. ELEVATED : EXALTED

- | | |
|---------------------------|-----------------------------|
| (a) Promoted : Excellence | (b) Raise : Commensurate |
| (c) Dirty : Filthy | (d) Disorderly : Unfaithful |
| (e) Purified : Hygienic | |

6. TICKET : ADMISSION

- | | |
|----------------------|--------------------|
| (a) School : Book | (b) Strong : Moral |
| (c) Neck : Collar | (d) Coat : Pocket |
| (e) Money : Luxuries | |

7. MUSIC : HARMONIUM

- | | |
|--------------------|----------------------------|
| (a) Novel : Writer | (b) Words : Word-Processor |
| (c) Author : Book | (d) Water : Tank |
| (e) Guitar : Sound | |

8. ENERGY : DISSIPATE

- | | |
|----------------------|------------------------|
| (a) Charge : Battery | (b) Food : Temperature |
| (c) Money : Squandor | (d) Power : Generator |
| (e) Atom : Power | |

9. COMMANDER : COMMANDS

- | | |
|--------------------------|--------------------------|
| (a) Surgeon : Diagnosis | (b) Senator : Legislates |
| (c) Teacher : Checks | (d) Aviator : Aerates |
| (e) Specific : Responses | |

10. FORMULA : CONSTITUENT

- | | |
|---------------------------|---------------------------|
| (a) Verdict : Sentence | (b) Rocket : Pilot |
| (c) Carburettor : Mixture | (d) Binominal : Monocular |
| (e) Equation : Term | |

Answers and Explanations

1. (d) The editor works on the magazine to bring it into shape for presentation to readers. The director works on the film to make it ready for release to the viewers. Here is the relationship of association. In other choices, the sequence is not matching the question pair.
2. (c) As rust can be cause and/or result of deterioration of ferrous objects, deterioration, unemployment can be cause and/or result of depression in the economy.
3. (c) Intelligensia is characterised as elitist; rabble (common class of people) may be characterised as plebeian (belonging to a lower social class of people).
4. (e) Tedious is a synonym for boring and indefatigable is a synonym for Untiring.
5. (c) Elevated (promoted/advancement) and exalted both have the same meaning.

but the latter is less in degree or intensity. Similarly, dirty is a lower degree of uncleanliness.

6. (e) A ticket enables admission and money enables one to buy luxuries.
7. (b) Music will be produced from a harmonium only if a skilled person plays it. Similarly words will be processed if a skilled operator uses the word processor. Choice (e) could have been correct if words were in reverse order to match the question pair sequence.
8. (c) Energy can be wasted or dissipated just as money can be wasted or squandered.
9. (b) The primary function of the commander is to command. Similarly a senator legislates. This is a functional relationship.
10. (e) Constituent is one of the components of a formula. Similarly, term is a constituent of equation. This is a whole and part relationship.

Hints for Solving Analogy Questions

Solving analogy questions can be made simple by keeping the following points in mind.

1. Establish the relationship between the given pair, before looking at the answer choices. After you have found the relationship, look at the answer choices to find a similar relationship amongst them.

Composer : Song :: ? : ?

- | | |
|--------------------------|-----------------------|
| (a) Building : Architect | (b) Poem : Poet |
| (c) Writer : Book | (d) Chair : Carpenter |

The primary relationship between the given pair of items Composer : Song is that the composer creates or composes a song. The same relationship exists in choice (c) where a Writer creates a Book.

2. The sequence of items in the answer choices contain a person and the article he creates or produces. In the question pair Composer : Song, the person comes first, followed by the article he creates. Therefore, in the correct answer choice, the person must come first followed by the article he creates. The only answer choice that satisfies this condition is (c) Writer: Book. It is, therefore, necessary to compare the sequence of items in the question pair with answers that may match the primary relationship.

The list of probable relationships found in analogy questions is given in the following table (Table 1).

ANALOGICAL RELATIONSHIPS**Table 1**

Type of relationship	Examples	Explanation
1. Antonymous relationship	Slim : Stout Poor : Rich Never : Always	Opposite in meaning
2. Synonymous relationship	Slim : Thin Kind : Benevolent Stout : Portly	Similar in meaning
3. Cause and effect relationship	Germ : Disease Mosquito : Malaria Insult : Humiliation	The second word is a reaction that occurs due to the first.
4. Worker-Article relationship	Author : Book Carpenter : Chair Cobbler : Shoe	Creator of an article and the article created
5. Worker Tool relationship	Tailor : Sewing machine Surgeon : Forceps Writer : Pen	Tools used by various technicians
6. Tool-Object relationship	Pen : Paper Saw : Wood Knife : Meat Starter : Motor	Tools used on the object (knife cuts the meat; starter starts the motor)
7. Whole-part, part-whole relationship	Car : Wheel Coils : Motor Soldier : Regiment	Wheel is part of a car; coil is a part of motor; soldier is a part of a regiment
8. Degree of difference relationship	Tap : Slam Nip : Crush Admiration : Love	Same meanings but difference in degree only
9. Classification relationship	Cow : Mammals Lizard : Reptile	Biological/botanical classification. Similarly there can be chemical/physical classification.

10.	Functional relationship	Axe : Wood Scissors : Cloth General : Command	First term described the function of the second
11.	Sex relationship	Man : Woman Male : Female Bull : Cow	
12.	Time sequence relationship	Morning : Evening Day : Night	
13.	Finished product and raw material relationship	Flour : Bread Grape : Wine Pulp : Paper	
14.	Symbolic relationship	Flag : Nation Stars : Rank	
15.	Specialist and subject relationship	Skin : Dermatologist Bone : Orthopaedist Heart : Cardiologist	
16.	Numerical relationship	4 : 16 5 : 25	Multiplication relationship. Similarly there can be relationships of division/ addition/ subtraction.
17.	Place relationship	Delhi : Red Fort Agra : Taj Mahal Bikaner : Rajasthan	Red Fort is in Delhi; Taj Mahal is in Agra; Bikaner is in Rajasthan.
18.	Association relationship	Time : Clock Barometer : Pressure	Clock is associated with time. Similarly barometer is associated with measurement of pressure.
19.	Purpose relationship	Sand Paper : Abrasion Oil : Lubrication	Sand paper is used for abrasion and oil for lubrication.

20.	Age relationship	Boy : Man Calf : Cow	
21.	Comparative relationship	Black : Coal Red : Blood	Examples used while making comparisons of colours, etc.
22.	Habit relationship	Lion : Carnivorous Cow : Herbivorous	Food habit relationship.
23.	Quantitative relationship	Kilogram : Gram Litre : Millilitre	
24.	Qualitative relationship	Big : Small Transparent : Opaque	Can also be classified under antonyms.
25.	Utility relationship	Chair : Sitting Pen : Writing Car : Driving	Relationship of the article to the purpose for which it is used.
26.	Blood/family relationship	Father : Mother Brother : Sister	

Practice Questions

1. LUGUBRIOUS : SORROWFUL

- | | |
|---------------------------|-------------------------|
| (a) Unhappy : Gloomy | (b) Lustrous : Luscious |
| (c) Credible : Incredible | (d) Euphoric : Cheerful |
| (e) Frenzied : Excited | |

2. GLOVE : HAND

- | | |
|-------------------|-------------------|
| (a) Neck : Collar | (b) Tie : Shirt |
| (c) Shoe : Lace | (d) Coat : Pocket |
| (e) Socks : Feet | |

3. STUDENT : MARK

- | | |
|---------------------|--------------------------|
| (a) Teacher : Class | (b) Pen : Nib |
| (c) Scholar : Book | (d) Discipline : Student |
| (e) Waiter : Tip | |

4. KNOB : DOOR

- | | |
|------------------|---------------------|
| (a) Shoe : Socks | (b) Belt : Trousers |
|------------------|---------------------|

Answers and Explanations

- (d) Lugubrious is a person more gloomy and a sorrowful person is only gloomy. Similarly, a euphoric person has more feelings of well being than a cheerful person. The words have the same meaning, the difference being only one of degree.
 - (e) Just as socks are made to fit and cover the feet a glove is made to fit and cover the hand.

3. (e) As a student gets marks for good work in a test or examination, a waiter gets a tip for giving good service.
4. (c) A knob must be on a door, a nose must be on a face.
5. (e) Primeval period is associated with the dinosaur and medieval period with the dragon.
6. (c) Deplete means to exhaust and enervate means to become weak. Exhaust and enfeeble also mean the same. The relationship is analogous with a difference of degree only.
7. (c) A candle is a source of light as a battery is a source of power.
8. (b) Embarrass and humiliate are similar in meaning but the latter is stronger in degree. The same relation exists between annoy and exasperate.
9. (e) Operation theatre is a place where surgery is performed and court is a place for litigation.
10. (c) One can overlook an error or an aberration; one can also pardon (condone) an offence.

OTHER FORMATS OF ANALOGY QUESTIONS

There may be questions on analogy in different formats. Some illustrations are given below:

Directions: Which makes the best comparison ?

- 1.** Foot is to hand as leg is to

(a) Elbow (b) Toe (c) Finger (d) Arm (e) Nails

ANSWER: (d) Arm

A foot is attached to a leg, a hand is attached to an arm.

- 2.** Love is to hate as valour is to

(a) Courage (b) Security (c) Cowardice (d) Anger (e) Terror

ANSWER: (c) Cowardice

Love is the opposite of hate. Valour is the opposite of cowardice.

- 3.** Daughter is to father as niece is to

(a) Nephew (b) Cousin (c) Uncle (d) Mother (e) Brother

ANSWER: (c) Uncle

Daughter is the female child of father, niece (daughter of one's brother or sister) has a similar relationship with uncle.

- 4.** Bark is to tree as scales are to

(a) Gills (b) Elephant (c) Fish (d) Skiing (e) Tape

ANSWER: (c) Fish

Bark is the outer protective cover of the trunk of a tree, scales are the outer protective cover of fish.

5. Pillow is to pillowcase as arm is to

- (a) Body (b) Sleeve (c) Hand (d) Glove (e) Ring

ANSWER: (b) Sleeve

Pillow fits inside the *pillowcase*, an *arm* fits inside a *sleeve*.

Practice Questions

1. INTIMIDATE : WHEEDLE

- | | |
|--------------------------|---------------------------|
| (a) Extol : Disparage | (b) Outwardly : Truely |
| (c) Defile : Rebuke | (d) Coordinate : Disinter |
| (e) Resolute : Impetuous | |

2. CAPRICIOUS : RELIABILITY

- | | |
|-------------------------------------|------------------------------|
| (a) Heated : Boiling | (b) Arbitrary : Whimsicality |
| (c) Tenacious : Practicality | (d) Unreliable : Inhuman |
| (e) Extemporaneous : Predictability | |

3. AGREEMENT : DISSENT

- | | |
|---------------------------|-------------------------|
| (a) Contract : Clause | (b) Schism : Diverge |
| (c) Impasse : Concede | (d) Touchdown : Penalty |
| (e) Latitude : Resistance | |

4. EXPEND : REPLENISH

- | | |
|------------------------|---------------------------|
| (a) Occupy : Re-occupy | (b) Encroachment : Occupy |
| (c) Defect : Rejoin | (d) Ferment : Rebellion |
| (e) Exhort : Encourage | |

5. LOATH : COERCION

- | | |
|--------------------------------|----------------------------|
| (a) Detest : Caressing | (b) Irritate : Caressing |
| (c) Irate : Antagonism | (d) Reluctant : Persuasion |
| (e) Contemplative : Meditative | |

6. SCALES : FISH

- | | |
|-------------------|--------------------|
| (a) Lady : Dress | (b) Skin : Man |
| (c) Tree : Leaves | (d) Bird : Feather |
| (e) Bear : Fur | |

7. STOOL : BENCH

- | | |
|---------------------------|----------------------|
| (a) Chair : Table | (b) Carpenter: Chair |
| (c) Foot rule : Yardstick | (d) Wood : Steel |
| (e) Glass : Cup | |

8. APPEAL : REFUSAL

- | | |
|---------------------------|------------------------|
| (a) Obesity : Over-eating | (b) Deny : Affirmation |
| (c) Try : Failure | (d) Struggle : Victory |
| (e) Examination : Passing | |

9. WEIGHT : KILOGRAM

- | | |
|-------------------|--------------------------|
| (a) Pint : Liquid | (b) Distance : Kilometre |
| (c) Mile : Length | (d) Pound : Weight |
| (e) Bushel : Corn | |

10. WRITER : PEN

- | | |
|---------------------|---------------------|
| (a) Needle : Tailor | (b) Artist : Brush |
| (c) Paint : Painter | (d) Teacher : Class |
| (e) Saw : Carpenter | |

Answers and Explanations

1. (a) Intimidation is forcing by fear a person to take action, while wheedle is persuading a person by flattery. Extol means praise highly and disparage means to belittle or treat slightly. Each is a pair of opposites.
2. (e) Capricious behaviour is not characterised by reliability. Extemporaneous actions are not characterised by predictability.
3. (c) An agreement may end if one of the parties to it begins to dissent. An impasse may end if one of the parties will concede a point or points to the other.
4. (c) Expend means to use up and replenish is to refill. To defect is to desert whereas rejoin means to return to the company of those one has left. There is an opposite relationship.
5. (d) If someone is loath (unwilling) to do something, coercion (use of force) may be required to change his mind. Similarly, if a person is reluctant, he may be persuaded to change his mind.
6. (b) Scales are the external covering of a fish as skin is the external covering of a human body. Choice (d) could have been also correct if the word pair should have been "Feather " Bird" so as to be in line with the question pair.

7. (c) Stool and bench both are for sitting purposes, the difference lies in the size (bench is bigger than stool). Similarly, footrule and yardstick both are for measuring the length, the difference is that the yardstick is bigger than the footrule.
8. (c) When one appeals, he expects an acceptance and not refusal. When one tries he expects success and not failure. The relationship is one of negative response to an action.
9. (b) Measurement of weight is expressed in kilogram as measurement of distance is expressed in kilometre. In answer choices (a) and (c) could have been acceptable if the sequence of the words would have been reverse in order to match the question pair.
10. (b) A writer needs a pen for his work and an artist needs a brush for his work. Other answer choices have been rejected as they do not follow the sequence of question pair.

LETTERS AND NUMBER ANALOGIES

As word analogy questions illustrated above, there may also be alphabets and/or number analogies. Some examples are given below.

Directions: Find the correct letter pair from the alternatives given in answer choices below, to locate the same relationship among the group of letters as established between the sets in the question.

1. ZA : YB :: XC : ?
 (a) YZ (b) NM (c) BC (d) OP (e) WD
2. ABCD : WXYZ :: EFGH : ?
 (a) STUV (b) STOU (c) STUE (d) TSUV (e) STUV
3. AD : BE :: CF : ?
 (a) DE (b) EC (c) DG (d) FG (e) GD
4. ACDE : OGHI :: ESTU?
 (a) EPQU (b) ABCD (c) OGHK (d) XYPE (e) ZXZE
5. BAC : DEF :: ? NOP BAC : DEF :: (?) : NOP
 (a) GHI (b) JHI (c) GIH (d) HJI (e) HIJ

Answers and Explanations

1. (e) Each pair contains a letter each from backward sequence (Z-A) and forward sequence (A-Z) following the natural alphabetical sequence.
2. (e) The first term in the question pair consists of four letters in forward sequence (A-Z) and the second term consists of four letters from the

end of the alphabetic order and the sequence remains forward in both cases (A to Z).

3. (c) Each term keeps the alphabetic sequence A(bc)D, B(cd)E, and D(e)fG.
4. (a) Each group of letters has one preceding and one final vowel with two consonants in between.
5. (e) Letters in each term follow the alphabetic sequence with an intervening vowel.

Practice Questions

Directions: In each of the questions below, a related pair of words in capital letters is followed by five pairs of words (a-e). Select that lettered pair that expresses the relationship that is most similar to that of the capitalised pair.

1. FURY : IRE

- | | |
|------------------------|---------------------------|
| (a) Cry : Whisper | (b) Dispassion : Emotion |
| (c) Joke : Laugh | (d) Amusement : Happiness |
| (e) Convulsion : Spasm | |

2. INK : PAPER

- | | |
|------------------------------|-----------------------------------|
| (a) Pen : Pencil | (b) Paint : Painting |
| (c) Chalk : Blackboard | (d) Carbon paper : Ball point pen |
| (e) Feltboard : Drawing pins | |

3. REMORSE : ABSOLUTION

- | | |
|--------------------------|-----------------------|
| (a) Evasion : Suspicion | (b) Horror : Sympathy |
| (c) Disdain : Corruption | (d) Banter : Passion |
| (e) Serious : Humour | |

4. VANDALISM : PROPERTY

- | | |
|--------------------------|------------------------------|
| (a) Implication : Crime | (b) Embezzlement : Fraud |
| (c) Perjury : Testimony | (d) Malpracticing : Cheating |
| (e) Testify : Reputation | |

5. FLOW-SHEET : MANUFACTURER

- | | |
|-----------------------|----------------------------|
| (a) Formula : Product | (b) Blue print : Architect |
| (c) Cameraman : Film | (d) Scenario : Writer |
| (e) Script : Actor | |

6. GOOD : EXCELLENT

- | | |
|--------------------------|------------------------|
| (a) Bad : Immoral | (b) Caution : Careless |
| (c) Hill : Mountain | (d) Jealousy : Respect |
| (e) Sickness : Medicines | |

7. NITROGEN : GASEOUS

- (a) Oxygen : Organic matter (b) Lead : heavy
 (c) Feather : Weightless (d) Mercury : Fluid
 (e) Nitrogen : Stale food

8. ZEPHYR : GALE

- (a) Decay : Age (b) Death : Sickness
 (c) Trickle : Torrent (d) Guest : Pest
 (e) Imprint : Emboss

9. ENCUMBER : BURDEN

- (a) Workload : Weariness (b) Behead : Sum up
 (c) Recapitulate : Synopsize (d) Reconcile : Alienate
 (e) Reptile : Poisonous

10. INCANDESCENT : GLOWING

- (a) Candlestick : Light (b) Flash : Flame
 (c) Tedium : Bore (d) Boor : Oafish
 (e) Indefatigable : Untiring

Answers and Explanations

1. (e) Fury means violent excitement (rage) and ire is anger. A difference of degree or intensity exists in these words. Convulsion is a more violent muscular contraction as compared to spasm.
2. (c) Ink is used to write on paper and chalk is used to writer on a blackboard.
3. (a) To exhibit remorse may result in absolution (freedom from consequences of a previous act), and to respond to questions with evasion may evoke suspicion. There is a cause and effect relationship.
4. (c) Vandalism is a malicious crime related with property. Perjury (false statement) is a crime connected with testimony.
5. (b) A flow-sheet is prepared by a manufacturer for the guidance of those involved in the manufacturing operations. A blue-print is prepared by the architect to guide the construction people.
6. (c) Excellent is greater in degree than good. Similarly, a mountain is higher than a hill.
7. (d) Nitrogen is a gas and mercury is a liquid. Relation of physical properties of the material.
8. (c) Zephyr is a much milder (gentle/balmy) wind as compared to gale (strong wind). Trickle is a smaller flow of liquid as compared to torrent.

9. (c) Encumber and burden are synonyms. Similarly, recapitulate is a synonym for synopsize.
10. (e) Incandescent is a synonym for glowing. Similarly, indefatigable is a synonym for untiring. In pairs (c) and (d), for tedious, there should have been boring and for boor it should have been oaf and not oafish.

Practice Questions

1. PAIN : MISERY

- | | |
|---------------------------|-----------------------------|
| (a) Disease : Poverty | (b) Despair : Loneliness |
| (c) Ignorance : Confusion | (d) Superstition : Peasants |
| (e) Ignore : Greet | |

2. PAINTING : ARTIST

- | | |
|--------------------|----------------------|
| (a) Song : Singer | (b) Musician : Music |
| (c) Author : Novel | (d) Cook : Mean |
| (e) Poem : Poet | |

3. BARREL : VIAL

- | | |
|-------------------------|---------------------|
| (a) Length : Height | (b) Low : High |
| (c) Brochure : Compiler | (d) Book : Pamphlet |
| (e) Book : Reader | |

4. BULLET : GUN BARREL

- | | |
|--------------------|-------------------|
| (a) Boat : Lake | (b) Nib : Pen |
| (c) Grass : Garden | (d) Lead : Pencil |
| (e) Train : Track | |

5. DUSTER : CHALK

- | | |
|------------------------|-----------------------|
| (a) Blackboard : Chalk | (b) Erasure : Writing |
| (c) Cloth : Air | (d) Sponge : Water |
| (e) Filter : Air | |

6. CABIN : SHIP

- | | |
|-----------------------|--------------------------|
| (a) Cockpit : Plane | (b) Wheel : Chair |
| (c) Room : Bungalow | (d) Kitchen : Store room |
| (e) Aeroplane : Pilot | |

7. ROAD-SIGN : STREET

- | | |
|--------------------------|----------------------------|
| (a) Road sense : Driving | (b) Handshake : Friendship |
| (c) Target : Hunter | (d) Title : Novel |
| (e) Landscape : Trees | |

8. RESTING : FATIGUE

- (a) Poverty : Disease (b) Over-eating : Obesity
 (c) Gourmet : Underweight (d) Race : Exercise
 (e) Dieting : Over-weight

9. COVER : BOOK

- (a) Chair : Cushion (b) Sofaset : Side table
 (c) Beds : Side table (d) Frame : Picture
 (e) Box : Clothes

10. THERMOMETER : BAROMETER

- (a) Hygrometer : Barometer (b) Thermometer : Temperature
 (c) Time : Clock (d) Yard stick : Length
 (e) Temperature : Atmospheric pressure

Answers and Explanations

1. (c) Pain causes misery and ignorance causes confusion.
2. (e) A painting is made by an artist and a poem is created by a poet. In other choices, the sequence of words is not in line with the question pair.
3. (d) Both the barrel and vial can hold liquid a barrel is bigger in volume than a vial. Similarly, both book and pamphlet consist of pages, the book is much larger.
4. (e) A bullet should have a gun barrel (cylindrical part of the gun) in order to get its "destination". Similarly a train should have a track to reach its destination.
5. (d) As a duster removes chalk from the black-board, a sponge removes water from a surface by absorption. It is a functional relationship.
6. (c) The living quarter in a ship is a cabin, similarly living place in a bungalow is a room.
7. (d) Road-sign gives information about the street, as title gives information about the novel.
8. (e) Resting is necessary for fatigue, as dieting is necessary for overweight.
9. (d) A cover is put on a book to preserve it. Picture is put in the frame to preserve it.
10. (a) The thermometer and barometer are the instruments of measurement. Only (a) has two instruments listed.

Illustrations

- Which numbers in choices (a), (b), (c) and (d) makes the best comparison?
 YY ZZZ Y ZZ Y is to 22 III 2 II 2 as YY ZZ Y ZZ Y is to
 (a) 12211212 (b) 211221121 (c) 22112112 (d) 21211221
- Which makes the best comparison ?
 LEAP is to PEAL as 8326 is to ?
 (a) 2368 (b) 6283 (c) 6328 (d) 2683

Explanations

- (c) Substitute numbers for letters : Y = 2, Z = 1.
- (c) Substitute numbers for letters : L = 8, E = 3, A = 2, P = 6. PEAL = 6328

Practice Questions

- TRILOGY : NOVEL

(a) Rice : Husk	(b) Milk : Cream
(c) Fabric : Weaving	(d) Gun : Cartridge
(e) Serial : Episode	
- IMPLICATE : INCRIMINATION

(a) Pejury : Fraud	(b) Embezzlement : Charging
(c) Exonerate : Acquittal	(d) Involve : Crime
(e) Involvement : Malpractice	
- HINDALIUM : ALUMINIUM

(a) Iron : Lead	(b) Carbon : Manganese
(c) Lead : Silver	(d) Brass : Copper
(e) God : Antimony	
- EXEMPT : OBLIGED

(a) Affluent : Fluent	(b) Immune : Susceptible
(c) Valiant : Puissant	(d) Steadfast : Putative
(e) Cavalier : Presumption	
- PEACEFUL : RESISTANCE

(a) Litigation : Lawlessness	(b) Coherent : Inconsistency
(c) Dumb : Follow	(d) Diligent : Reliability
(e) Rough : Forceful	

6. BALL : THROW

- | | |
|---------------------------|-------------------|
| (a) Shuttle cock : Racket | (b) Ball : Bat |
| (c) Dog : Pat | (d) Hockey : Ball |
| (e) Shoot : Rifle | |

7. JUDGE : ADJUDICATE

- | | |
|---------------------------|--------------------------|
| (a) Advocate : Jury | (b) Mediator : Reconcile |
| (c) Lawyer : Client | (d) Appellant : Implore |
| (e) Researcher : Emendate | |

8. PEDANT : ERUDITION

- | | |
|-------------------------|------------------------|
| (a) Diplomat : Tactless | (b) Prude : Modesty |
| (c) Enemy : Friendly | (d) Blunt : Politician |
| (e) Rude : Politeness | |

9. SOLDIER : STEN GUN

- | | |
|---------------------|--------------------|
| (a) Bow : Arrow | (b) Sword : Knight |
| (c) Lock : Key | (d) Horse : Cart |
| (e) Rifle : Trigger | |

10. VOLCANO : LAVA

- | | |
|------------------------|--------------------|
| (a) Fault : Earthquake | (b) Death : Sorrow |
| (c) Delta : River | (d) Rock : Sand |
| (e) Earth : Crust | |

Answers and Explanations

- (e) A trilogy is a work consisting of three novels, a serial is a work consisting of a number of series (instalments)
There is a whole and part relationship.
- (c) Incrimination means to charge someone with a crime.
To implicate someone in a crime is to connect him with the crime which would lead to his incrimination. To exonerate a person charged with a crime would free him and lead to his acquittal.
- (d) Hindalium is an alloy from aluminium and brass is an alloy made from copper.
- (b) Exempt means free from obligation or liability, whereas obliged means subject to comply or perform. There is an opposite meaning relationship. Immune means protected from and susceptible means vulnerable to which also have an opposite meaning relationship.
- (b) A peaceful person does not show resistance, a coherent person is usually well organised and does not show inconsistency.

6. (c) You can throw a ball and pat a dog. Relationship of action on a subject.
7. (b) A judge adjudicates and a mediator helps in reconciliation. The second term in both cases is a major function of the first term.
8. (b) Pedant and erudition relate to a person who attaches too much importance to learning and a prude is a person who displays excessive modesty.
9. (b) A sten gun is a soldier's weapon like a sword which is a weapon for a knight. Both share a functional relationship.
10. (a) A volcano causes lava to flow. Faulting or displacement of the earth's crust causes an earthquake. Both are natural occurrences connected with the earth.

TYPE 4: CODING AND DECODING

Another set of questions, which often appear in the competitive examinations are related to coding and decoding. In such questions, you are required to decipher a given code by applying some rule (which you have to determine from the example given in the question) and then either encode another code or decode a code given in the question.

Illustrations

1. If C E J Q is coded as X V Q J, then B D I P will be coded as :
 (a) W U R Q (b) Y W R K (c) W U P I (d) Y W P I
2. Which of the following choices will replace the question mark ?
 MILD : NKOH :: GATE : ?
 (a) H D V Q (b) H C W I (c) I B U P (d) H D U R

Answers and Explanations

1. (b) The first 13 letters of the alphabet are coded by the 13 letters of the alphabet in reverse, i.e.

= A B C D E F G H I J K L M (first 13 letters)

= Z Y X W V U T S R Q P O N (13 letters in reverse)

It is obvious from the above coding scheme that :

B = Y, D = W, I = R and K = P or P = K

Therefore, B D I P will be coded as Y W R K.

2. (b) Here, letters are coded by skipping letters in alphabetical order, i.e.,

M = N (no skipping)

I = (j) K (letters in brackets are the ones skipped)

L = (mn) O

D = (efg) H

The skipping pattern is -1, -2 and -3.

Therefore, G A T E will be coded as follows:

G = H

A = (b) C

T = (uv) W

E = (fgh) I

Hence, GATE will be coded as H C W I.

There may be several ways of coding letters some of which are discussed below.

Practice Questions

Directions: Questions 1-6 are based on the following coding pattern: If 'EFGHIJK' are coded letters representing 'VUTSRQP', choose the right code for the words given in capital letters from the answer choices (a-e) given under each

1. LIMIT

- | | |
|---------------|---------------|
| (a) K N R N C | (b) O R N R G |
| (c) J K O K G | (d) R S T S G |
| (e) M H L H S | |

2. SOUR

- | | |
|-------------|-------------|
| (a) I F L T | (b) H L F I |
| (c) L I F T | (d) I H I F |
| (e) F L T I | |

3. POCKET

- | | |
|-----------------|-----------------|
| (a) K L X P U C | (b) K L X U P G |
| (c) K L X G U P | (d) K L X V P G |
| (e) K L X P V G | |

4. GROUP

- | | |
|---------------|---------------|
| (a) T I L F K | (b) T I L E L |
| (c) T I L G H | (d) T I L H G |
| (e) T F G F K | |

5. HIGH

- | | |
|-------------|-------------|
| (a) S T R S | (b) R J H R |
|-------------|-------------|

(c) G L O G

(d) R S T R

(e) S R T S

6. ZERC

(a) B U H N

(b) A V I M

(c) A V I L

(d) A U T L

(e) A V T I

Directions: 'GO AHEAD' is coded as 'J R D K H D G' and STOP is coded as 'V W R S', how will you code/decode the letters given in capitals in question 7-12. Choose the correct answer choices (a-e).

7. FIRE

(a) U R I V

(b) I U J G

(c) L U H I

(d) I L U H

(e) J R S G

8. SHOOT

(a) V K R R W

(b) U M S S X

(c) T J P P R

(d) V K S S W

(e) V L Q Q U

9. RETURN

(a) U H W X U Q

(b) V I X U Q M

(c) U H W X U R

(d) U H W X V R

10. VWDUW

(a) STAIN

(b) STEPS

(c) SPORT

(d) STAND

(e) START

11. HEAD

(a) K H D G

(b) N U E G

(c) U H D G

(d) K H G D

(e) K B G A

12. GRZQ

(a) OWNS

(b) DOWN

(c) DONE

(d) COME

(e) SHUT

- 13.** If 'GIRL' means 'HJSM', what does 'R N E S' means?
- BOYS
 - COWS
 - TOYS
 - SOFT
 - BULL
- 14.** If 'D B M D V U U B' stands for 'CALCUTTA', how will you write BOMBAY?
- D Q O D D X
 - C P N C B Z
 - D P N C B
 - C P M C B Z
 - C P N V F Z

Answers and Explanations

- (b)
- (b)
- (e)
- (a)
- (e)
- (c) Here, the coding scheme is A = Z, B = Y, C = X and so on.
- (d)
- (a)
- (a)
- (e)
- (a)
- (b) Each letter is coded for the fourth one in alphabetic sequence, i.e. A = D, B = E, C = F and so on.
- (d) A letter of alphabet stands for the next in the sequence, i.e. A = B, B = C, C = D, and so on.
- (b) The code is as per the following sequence
A = B, B = C, C = D, D = E and so on.
Thus 'BOMBAY' is 'C P N C B Z'

ANALOGICAL LETTER CODING

These codes are based on the analogy given in the question itself. For example:

If SPTFA stands for BLADE, how will you code BALE ?

ANSWER: S T P A

BLADE has been coded as SPTFA. You will see that all letters in the word BALE, which have to be coded, are also there in the word BLADE. Hence all that needs to be done is to choose the relevant code letters from the code word SPTFA.

Thus B becomes S, A becomes T, L becomes P, and E becomes A. Therefore, BALE will be coded as STPA.

Coding with Specific Pattern

Here, letters are allotted an artificial value but in a specific pattern. You have to first determine the pattern involved and then solve the question. For example : If MAILED is coded as N B J M F E, how will you code the word ACTED?

ANSWER: B D U F E

Here, each letter stands for the next letter in the sequence. A becomes B, B becomes C, D becomes E, and so on. Therefore, ACTED becomes B D U F E

Coding by Reversing or Interchanging Positions of Letters

Illustration

If T S E R E V E and N O I T A C U D E stands for EVEREST and EDUCATION respectively, how will you code RED FORT?

ANSWER: T R O F D E R

You observe that the code is the reverse of the given word. The answer is obviously T R O F D E R which is the reversed form of RED FORT.

Coding with Numbers

In this type of question, the letters of the alphabet are allotted a numerical value. For example:

If LODES is coded as 46321, how will you code the word DOES ?

ANSWER: 3621

Here, you will observe that all the letters of DOES are included in the letters of LODES, for which you have the code D = 3, O = 6, E = 2, S = 1. Therefore DOES = 3621.

Practice Questions

- If OVER is coded as QYIW and UP as WS, then STAR is coded as

(a) U W E V	(b) U W D V
(c) U V B S	(d) U W E W
(e) U W E X	
- In a certain code 'DELHI' is written as 'C D K G H' 'MADRAS' as 'I Z C Q Z R', how will PATNA be coded then?

(a) O Z T M Z	(b) O Z S M Z
(c) Q B U M B	(d) Q Z T Z M
(e) O Z M S Z	

3. How will you code ACCOMMODATE if S and V are coded as 8 and 5 respectively?
 (a) 26-24-24-12-14-14-23-22-26 (b) 26-24-24-12-14-14-23-26-22
 (c) 2-25-25-12-14-14-23-26-22 (d) 26-24-12-14-14-23-21-26-22
 (e) 26-25-25-12-13-23-26-22
4. If 'FIRE' is coded for a secret message to be teleprinted as 'E H Q D', how is the reply 'DONE' to be relayed?
 (a) D-M-O-E (b) C-N-M-D (c) D-L-N-C (d) D-N-P-E (e) D-M-P-E
5. 'N P W F' is a secret code for "MOVE". You have to telex the reply DIFFICULT using a code based on the scheme used to code MOVE?
 (a) E J G G J D V M U (b) F K H H K E W N V
 (c) E J G G J E V M U (d) E J C C J D V M U
 (e) E J G C E J V M U
6. DRIVER = 7
 PEDESTRIAN = 11
 ACCIDENT = ?
 (a) 9 (b) 8 (c) 6 (d) 18 (e) 0
7. If A = E, B = F, C = G and H = L, how will you code 'GO AHEAD'?
 (a) K S F L I F H (b) H P B I F B E
 (c) K S G L I G H (d) H P B I F D E
 (e) K S E L I E H
8. If III stands for 2, IIII for 3 and II for 1, solve the following.
 III - II + III + IIII = ?
 (a) IIIIII (b) IIIIIIIII (c) IIII (d) III (e) VII
9. If M P O E P O = LONDON, what does N P T D P X mean?
 (a) MOSCQE (b) AFRICA
 (c) MOSDQW (d) MOSDOP
 (e) MOSCOW
10. If PEKING is coded as 'O D J H M E', how will you code SYDNEY?
 (a) R H C M D Y (b) R X C M D X
 (c) S H C M E X (d) R H C M E X
 (e) R I C M D X

- 11.** PROMOTION is written in a certain coded message as 'Q S P 89', then what will be the code for DEMOTION.
- E F N L U P M
 - EG89
 - DE89
 - DE 117
 - EF 89
- 12.** If DIFFICULT is coded as E J G G J D V M U and LOCOMOTIVE is coded as M P D P N P U J W F, what will be the codes for the following:
- LUCKNOW
 - PATNA
- MVDLOPX/QBUOB
 - MUDLOPY/QBUOB
 - MVDLOPX/QBUPB
 - MVDLOPY/QBUOB
 - MVDLOPX/QAUOB

Answers and Explanations

- (d) Replace the first letter O by Q, i.e. skipping one immediate letter (P) the second letter V by Y, i.e. skipping immediate letters in between (W and X) and third letter E by I, i.e. skipping 3 letters in between (FGH) and so on.
- (b) The first letter is coded as the letter previous to it, i.e. D = C, F = E, B = A and keeping circular coding continuity of alphabet, after Z again A will come and so on.
- (b) Letters are numbered in backward sequence, i.e. A = 26, B = 25, C = 24 X = 3, Y = 2 and Z = 1.
- (b) The preceding letter is taken for coding the following letter in the sequence, i.e. B = A, C = B and so on.
- (a) A is coded as B, C as D and so on.
- (a) Count the number of letters in a word and add one to get the coded number.
- (e)
- (a)
- (e) Every letter here stands for its preceding letter, i.e. B or A, C for B, D for C and so on.
- (b) Go one letter back in the case of every letter of the word.
- (e) Suffix motion is coded as 89. The letters preceding motion are coded as next in the sequence, i.e. P = Q, R = S, O = T, etc.
- (a) Every letter stands for its subsequent letter in the sequence, A = B, B = C, C = D, etc.

OTHER FORMATS

The questions on coding and decoding may be in other formats also, as illustrated below.

Three terrorist messages were intercepted at a CRPF H.Q. The message was decoded and it was found that *Mising letis Zerox*, means *secret attack Sunday* and *Tycoon fox letis* means *Secret plans included* and *Yphen mising tiger cage* means *Sunday victory is ours*.

1. What does the code *Zerox* mean here ?
 - (a) secret
 - (b) Sunday
 - (c) attack
 - (d) plans

2. What does *letis* stand for ?
 - (a) plan
 - (b) secret
 - (c) attack
 - (d) Sunday

3. Which is the code for Sunday?
 - (a) Tiger
 - (b) mising
 - (c) zerox
 - (d) *letis*

ANSWERS: 1. (c) attack 2. (b) secret 3. (b) mising

If you carefully read the coded words and their meaning, you will find:

letis = secret

zerox = attack

mising = Sunday

Letis and *mising* are repeated in each coded message which makes it obvious that *letis* = secret and *mising* = Sunday. Similarly, it is obvious that *zerox* stands for attack.

There are no rules governing such questions. Only careful analysis of the codes and the words they stand for will help you tackle such questions.

In the test papers given at the end of this section, you will find examples with various methods used for coding and decoding.

Practice Questions

1. If TEACHER and 'HIGHLY' are written as 'X W P B R W M' and 'Q S N R D Z' respectively, how will you code the word 'CHARITY'?
 - (a) B P R N S B Z
 - (b) B R P M S Z B
 - (c) B R P M S D Z
 - (d) B R P M S X Z
 - (e) B P R N B S Z

2. 'SCHOOL = PNIKKB' and ME = ZY. How will you write 'COOLHOME'?
 - (a) N K K B I K Z Y
 - (b) N K K L I K Z Y
 - (c) P K K N I K Y Z
 - (d) N K K B P K Z Y
 - (e) N K B I B K Z Y

3. 'XYMNOPQ' is a certain code which is deciphered as 'N B O U I G T'. Based on this scheme of coding, write the word 'OUTING'
- (a) M N O Q P N (b) M N Q O Y P
 (c) P W D C T N (d) M N O P Q N
 (e) M N Q O P Y
4. If 'C L I P O S E' stands for 'M T D F B E F', how will you code 'POLICE'?
- (a) F B T D M F (b) F B T D M E
 (c) F B T D E M (d) F T B D M F
 (e) F S D T M E
5. 'X Y M N O P Q' is decoded as N B O U I G T code OUTGOING.
- (a) M N Q O X N P Q (b) M N O Q X N O X
 (c) M N Q P M O X P (d) M N I O X P I N
 (e) M N I O X P X P
6. 'LOAD' is coded as 'M P B E' and 'DRIVE' as 'E S J W F'. How will you code the word 'LADDER'?
- (a) M D E E F S (b) M B E E F S
 (c) N C F F G T (d) M B E E S P
 (e) O C F F G T
7. GO AT ONCE is a coded message received as 'JB SM BQZY' and you are required to relay the answer in a code saying GO TO GATE. Select the code you will be using based on the scheme applied in the example here?
- (a) HP BU PMDF (b) JB MK JSMY
 (c) IM CS QMDF (d) JB MK JMSY
 (e) JB MB JSMY
8. 'START = WALKA' and BUDPI - XZFMQ, how will you code 'STUPID'?
- (a) B A Z M O E (b) W A Z M Q F
 (c) W A Z M Q F (d) B A Z M Q F
 (e) W A Z Q M F

Directions: Based on the following code and key scheme, code and decode the words/letters written in capital letters

CODE	Z A X B Y O T W C M I
KEY	B U E T F A I R U L D

9. BEAUTY

- | | |
|-----------------|-----------------|
| (a) Z X O C B F | (b) T X A C I F |
| (c) Z X O C F I | (d) Z X O F C I |
| (e) Z X C O F I | |

10. FAILED

- | | |
|-----------------|-----------------|
| (a) Y O T M X I | (b) Y O T M X D |
| (c) Y O T M I X | (d) A I R M X D |
| (e) Y O T X I M | |

11. FLAIR

- | | |
|---------------|---------------|
| (a) Y M O T W | (b) Y M U T W |
| (c) Y M I O W | (d) Y M O I W |
| (e) Y M W I O | |

12. TEARFUL

- | | |
|-------------------|-------------------|
| (a) B X O W Y C M | (b) I X U M Y C M |
| (c) B X U W I C M | (d) B X U W M Y C |
| (e) B X W U Y C M | |

13. If 'HBPQMNOT' stands for 'SUNDAY TO', how will you write 'YOU DO SO' using the coding scheme used for 'SUNDAY TO' ?

- | | |
|-------------------|-------------------|
| (a) N T B Q T H T | (b) N T B Q T H B |
| (c) N T Q B T H B | (d) N T Q B T H T |
| (e) N T B Q H T B | |

Directions: If "MODERN" and "ORTHODOXY", being opposite each other are coded as "YOUNGS" and "OGBAOUOML" respectively, how will you code/decode the following words/letters. Where a dash (—) is given, try to fit in a letter to make a meaningful word.

14. THORN**15. REM-TE****16. XEROX-D****17. METH-D****18. ORDE-ED****19. THO-NY****20. MON-Y****21. THRO- -****22. REME-Y****23. OTHER****24. DORTHY****25. RHYTHM**

Answers and Explanations

- | | | | | |
|-------------------|---------|-----------------|--------|---------|
| 1. (d) | 2. (a) | 3. (b) | 4. (a) | 5. (c) |
| 6. (b) | 7. (e) | 8. (b) | 9. (a) | 10. (a) |
| 11. (a) | 12. (a) | 13. (a) | | |
| 14. B A O G S | | 15. G N Y O B N | | |
| 16. M N G O M N U | | 17. Y N B A O U | | |
| 18. O G U N G N U | | 19. B A O G S L | | |
| 20. Y O S N L | | 21. B H G O S N | | |
| 22. G N Y N U L | | 23. O B A N G | | |
| 24. U O G B A L | | 25. G A L B A Y | | |

TYPE 5: SENSE OF DIRECTION

These are questions pertaining to movement of a person or a vehicle in a given direction. Using sense of direction, you are required to determine the location of the person or vehicle, after the person or vehicle has covered a certain distance, taking turns towards right to left.

EXAMPLE

A man starts from a point and moves 3 km north, then turns to west and goes 2 km. He turns north and walks 1 km and then moves 5 km towards east. How far is he from the starting point?

- (a) 11 km (b) 5 km (c) 10 km (d) 8 km

ANSWER: (b)

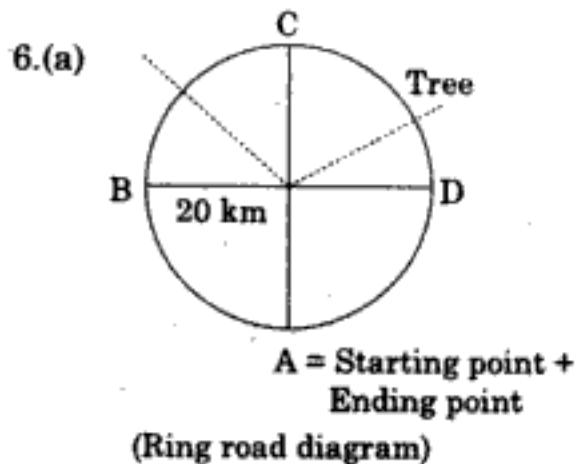
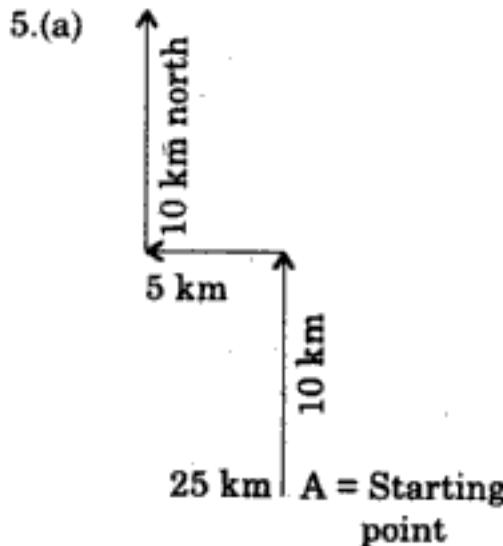
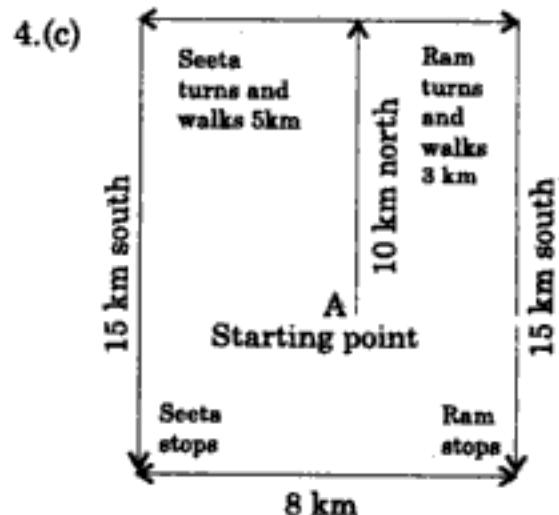
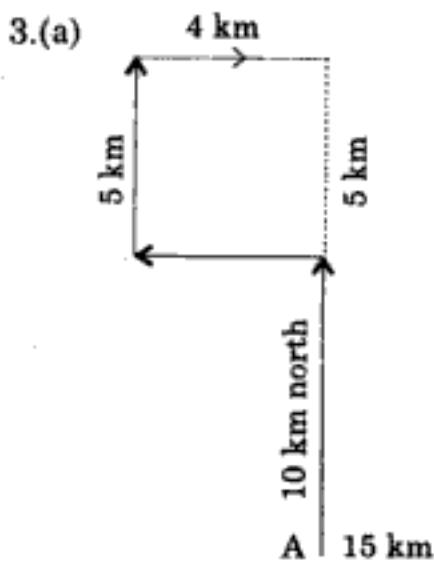
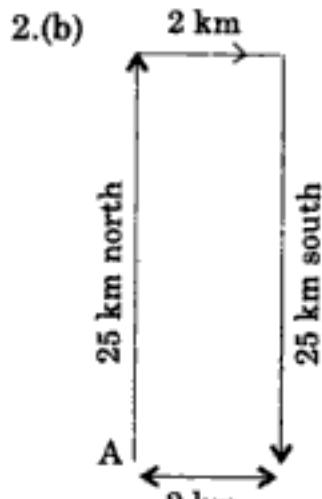
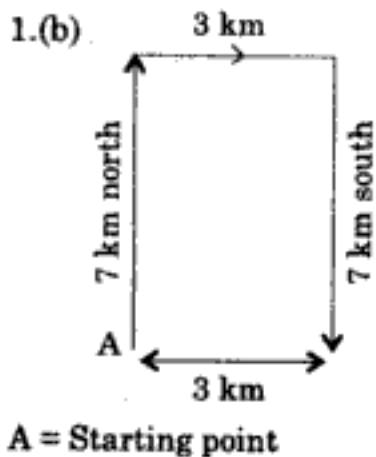
Questions

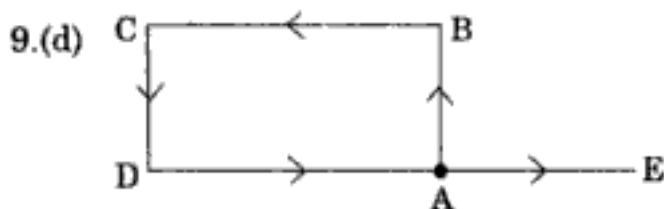
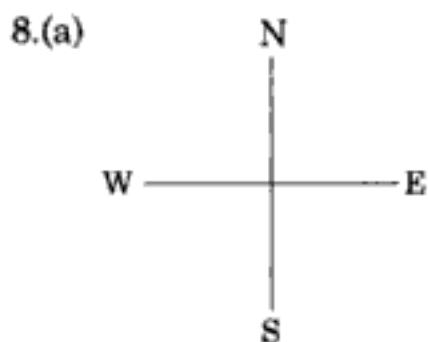
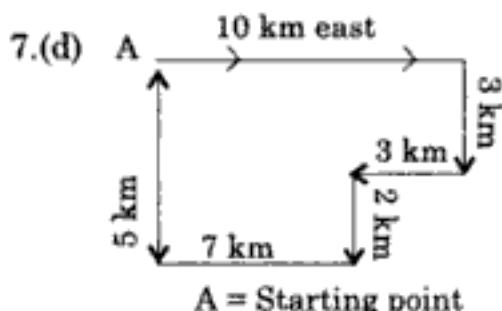
- Sham travels 7 km North, then turns right and walks 3 km. He again turns to his righthand side and moves 7 km forward. How many km is Sham away from the place of his starting the journey?
 (a) 7 km (b) 3 km (c) 6 km (d) 14 km
- Reeta drives to North of her place of stay at A and finds after travelling 25 km that she has driven in the wrong direction. She then turns to the right and travels 2 km and then again turns right and drives straight another 25 km. How much distance she has now to cover to go back to the point from where she started?
 (a) 25 km (b) 2 km (c) 4 km (d) 50 km
- Rana travels 10 km North turns left and travels 4 km and then again turns right and covers another 5 km. He then turns to righthand side and travels another 4 km. How far is he from the point of starting his journey?
 (a) 15 km (b) 4 km (c) 5 km (d) 10 km
- Seeta and Ram both start from a point towards North. Seeta turns to left after walking 10 km. Ram turns to right after walking the same distance.

Seeta waits for some time and then walks another 5 km, whereas Ram walks only 3 km. They both then return to their respective South and walk 15 km forward. How far is Seeta from Ram?

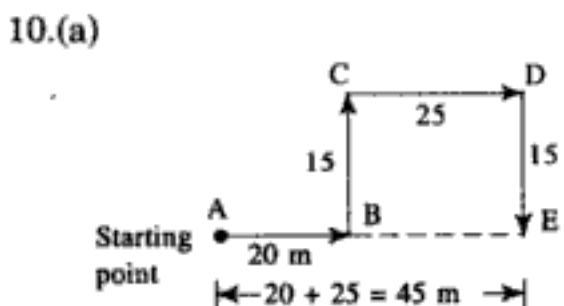
- (a) 15 km (b) 10 km (c) 8 km (d) 12 km
5. A taxi driver commenced his journey from a point and drove 10 km towards North and turned to his left and drove another 5 km. After waiting to meet one of his friends, he turned to his right and continued to drive another 10 km. He has covered a distance of 25 km so far but in which direction he now may be?
- (a) North (b) East (c) West (d) South
6. There is a ring road connecting points A, B, C and D. The road is in a complete circular form but having several approach roads leading to the centre. Exactly in the centre of the ring road there is a tree which is 20 km from point A on the circular road. You have taken a round of the circular road starting from point A and finish at the same point after touching points B, C and D. You then drive 20 km interior towards the tree from point A and from there reach somewhere in between B and C on the ring road. How much distance you have to travel from the tree to reach the point between B and C on the ring road?
- (a) 20 km (b) 15 km (c) 80 km (d) 40 km
7. A tourist drives 10 km towards East and turns to righthand side and takes a drive of another 3 km. He then drives towards West (turning to his right) another 3 km. He then turns to his left and walks another 2 km. Afterwards, he turns to his right and travels 7 km. How far is he from his starting point and in which direction?
- (a) 10 km East (b) 9 km North (c) 8 km West (d) 5 km south
8. Rahul walks 30 metres towards south. Then turns to his right and starts walking straight till he completes another 30 metres. Then again turning to his left he walks for 20 metres. He then turns to his left and walks for 30 metres. How far is he from his initial position?
- (a) 50 metres (b) 30 metres (c) 10 metres (d) 60 metres
9. Vandana drove her car for 30 kms due North. Then she turned left and drove for 40 kms. She then turned left again and drove yet another 30 kms. Again she turned left and drove her car 50 kms. How far do you think she actually drove her car from the initial position?
- (a) 10 kms (b) 50 kms (c) 30 kms (d) None
10. Shaloo ran 20 m to the east, then he turned left and walked for 15 m, then turned right and went 25 m and then turned right again and went 15 m. How far was Shaloo from the starting point?
- (a) 45 m (b) 35 m (c) 25 m (d) 15 m

Answers





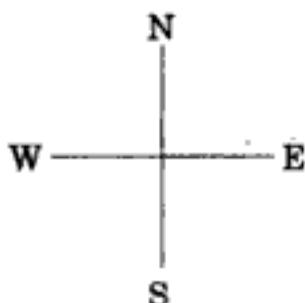
Vandana started from A and finished at E.
The actual distance between A and E is
only 10 km, which is none of the answer.



Distance actually travelled is
 $(A \text{ to } B) + (B \text{ to } E) = 20 + 25 = 45 \text{ m}$

How to Tackle Such Questions?

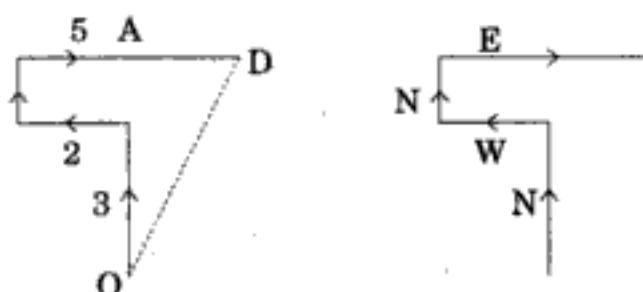
(1) Keep in mind the directions as given in maps:



(2) Keep in mind the change in direction when a person or vehicle takes a right or a left turn.

Direction before taking the turn	Direction in which the person or vehicle will be moving after taking the turn	
	Right	Left
North	East	West
South	West	East
East	South	North
West	North	South

Now to solve the question given in the above example, the following picture emerges on visualizing the movement of the person.



It may be seen that OAD forms a right angled triangle, whose dimensions can easily be derived. Thus the distance OD may be determined by applying Pythagoras theorem as follows:

$$\begin{aligned}
 (OD)^2 &= (OA)^2 + (AD)^2 \\
 &= (3 + 1)^2 + (5 - 2)^2 \\
 &= 4^2 + 3^2 = 16 + 9 = 25 \\
 (OD)^2 &= 25 \\
 OD &= 5 \text{ km}
 \end{aligned}$$

Let us now look at another example.

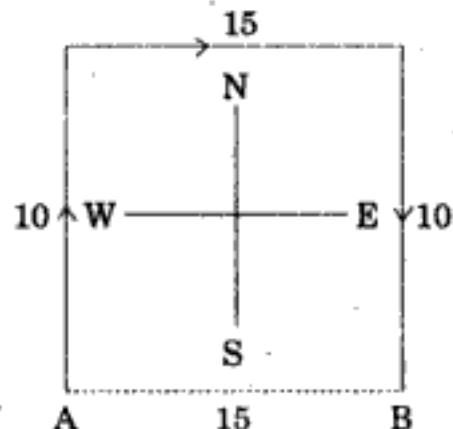
A vehicle starts from point A and runs 10 km towards north, turns to its right and runs 15 km. It then turns to its right again and runs another 10 km to reach point B.

- (1) After reaching point B, how far is the vehicle from the starting point A?
 (a) 25 km (b) 15 km (c) 10 km (d) 35 km
- (2) After taking the second turn, in which direction will the vehicle be moving?
 (a) North (b) East (c) South (d) West

ANSWERS: 1. (b) 2. (c)

Explanation

If you plot the movement of the vehicle as described in the question, the following picture emerges and the answers follow:



Practice Questions

Ques (1-4): If you start running from a point towards north and after covering 4 kms you turn to your left and run 5 km, and then again turn to your left and run 5 km and then turn to left again and run another 6 km and before finishing you take another left turn and run 1 km then answer questions (1-4) based on this information

- How many km are you from the place you started?
 (a) 1 km (b) 2 km
 (c) 3 km (d) 4 km
 (e) 5 km
- In which direction will you be running while finishing?
 (a) East (b) West
 (c) North (d) South
 (e) South-West
- After taking the second turn, in which direction will you be running?
 (a) East (b) West
 (c) North (d) South
 (e) North-East

4. From the finishing point if you have to reach the point from where you started, in which direction will you have to run?
- East
 - West
 - North
 - South
 - North-West

Directions (5-7): Study the given information and answer the following questions.

- There are 6 check-posts A, B, C, D, E and F.
 - Check-post F is 25 kms to the North of D which is 35 kms to the North-East of B.
 - Chek-post A is 15 kms west of E and 35 kms to the south-west of 'C'.
 - B, A and E are in straight line.
 - The check posts B and E are 70 kms apart from each other.
5. Which check post is the farthest to the south-west of D?
- A
 - B
 - C
 - D
 - E
6. Which port is the nearest and to the north-east of E?
- A
 - B
 - C
 - D
 - E
7. If a jeep moves from E to F via A, B and D, how much distance it will have to cover?
- 130
 - 120
 - 100
 - 90
 - 160

Directions (8-12): Ram walks 2 km towards North and turn to his right and walks 4 km more. He then turns to his right and walks 4 km and turns again to his right and walks another 4 km. Here he meets Renu coming from the opposite direction. They both stop here.

8. After taking the first turn, in which direction was Ram going?
- South
 - North
 - West
 - East
 - South-East
9. If the starting point is marked 'A' and finishing point is marked 'B'. What will be the distance between these points?
- 10 km
 - 8 km
 - 6 km
 - 2 km
 - Cannot be determined
10. From which direction was Renu coming?
- South
 - North
 - South-east
 - East
 - West

11. After taking the second turn, in which direction was Ram walking?
 (a) West (b) North
 (c) South-east (d) South
 (e) East
12. If Ram is to again reach the point from where he started in which direction will he have to go from where he's standing now?
 (a) East (b) North
 (c) South-east (d) North-east
 (e) South

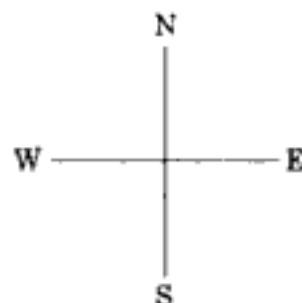
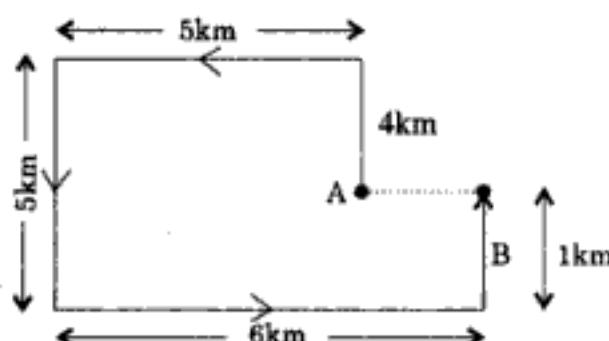
Answers and Explanations

1. (a)

2. (c) Q.1-4.

3. (d)

4. (b)

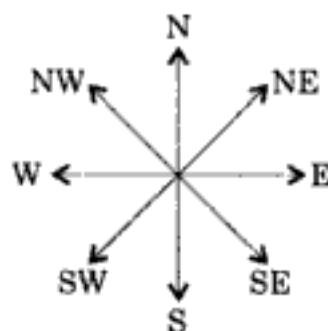
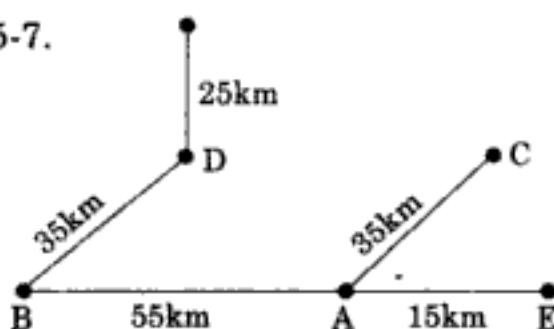


5. (b)

Q.5-7.

6. (c)

7. (a)



The total distance covered will be $15 + 55 + 35 + 25 = 130$ kms

8. (d)

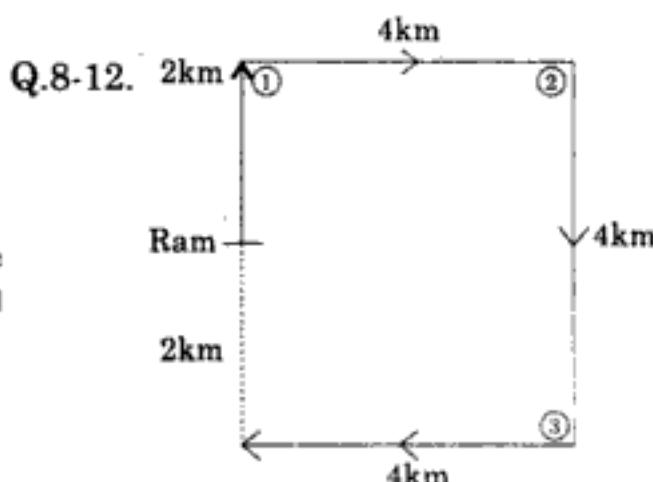
9. (d)

10. (e)

11. (d)

12. (b) For solving questions 8-12, the situation has to be diagrammed as follows:

- 1 = First turn
- 2 = Second turn
- 3 = Third turn



VERBAL ABILITY TESTS

In verbal ability tests, there may be questions on word-building, re-arranging and sorting out jumbled words, finding similar and dissimilar words, etc.

TYPE 6: WORD BUILDING

There are various formats/patterns of word-building tests, some of which are illustrated below:

Finding common prefix or suffix

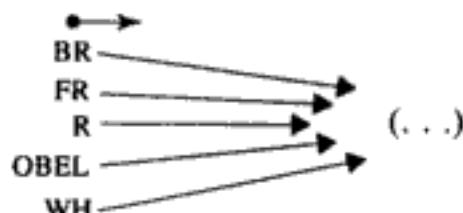
Here five or six sets of letters or words are given and you have to select a common prefix or suffix which can be added to all of them to form meaningful words.

Illustration

Direction: Find the word-ending which can be suffixed to all the letters/sets of letters given in the question:

- | | |
|-----------|-------------|
| (a) = oad | (b) = ushes |
| (c) = isk | (d) = ied |

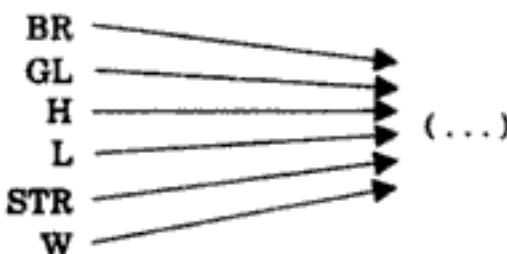
ANSWER: (c) isk



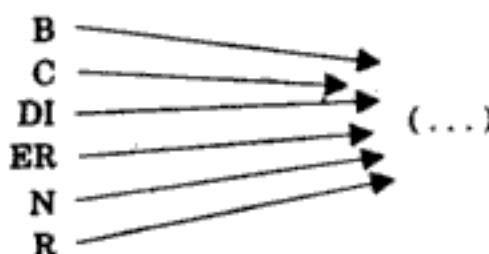
To solve such questions, the first thing to be noted is that number of dots in the brackets. In the above example there are three dots (...), which means that the suffix or word-ending should comprise only three letters. Secondly, the word-ending to be selected, should form meaningful words with all the letters/sets of letters given in the question.

In the above illustration, choice (a) -oad can be used only with BR and R. Choice (b) -ushes has five letters, and as such can be eliminated, because there are only three dots in the brackets. Similarly choice (d) -ied cannot be added to all the letters/set of letters. Hence we are left with choice (c) -isk. The words formed are : BRISK, FRISK, RISK, OBELISK, and WHISK

Let us see other examples:

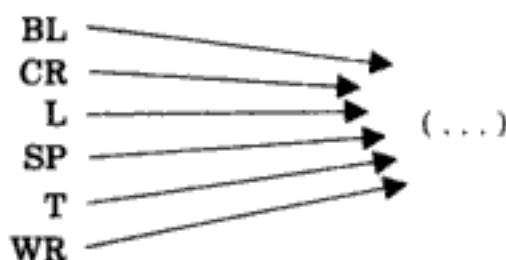


1. (a) -ide (b) -ing (c) -ight (d) -and



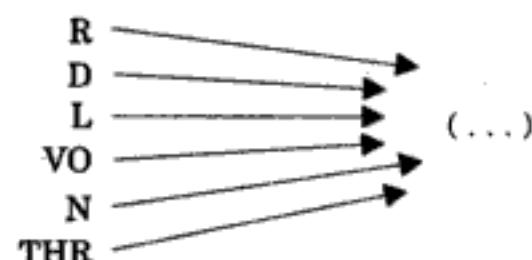
2.

- (a) -oot (b) -ook (c) -eep (d) -ode



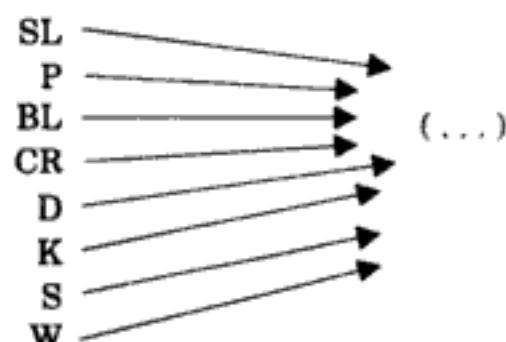
3.

- (a) -eak (b) -ead (c) -ear (d) -eal



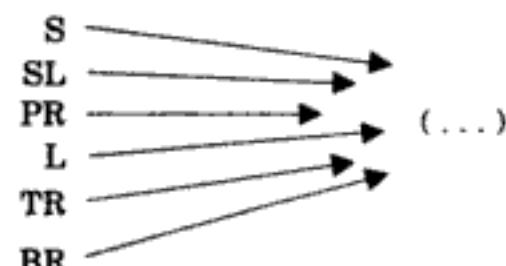
4.

- (a) -ide (b) -ead (c) -eep (d) -ice



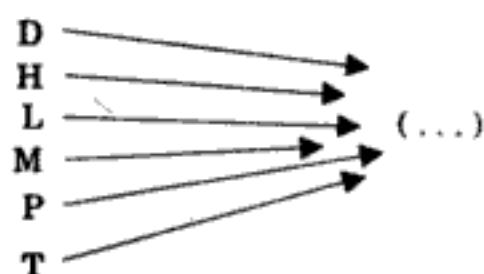
5.

- (a) -eek (b) -eep (c) -ide (d) -ope



6.

- (a) -een (b) -eep (c) -ick (d) -our



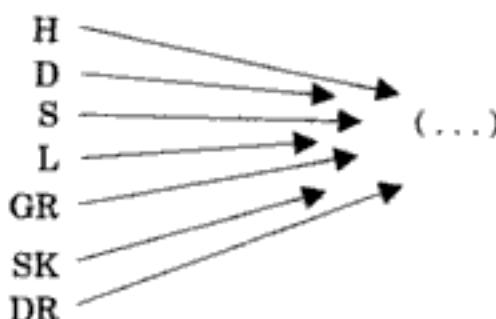
7.

(a) -int

(b) -ark

(c) -ash

(d) -ear



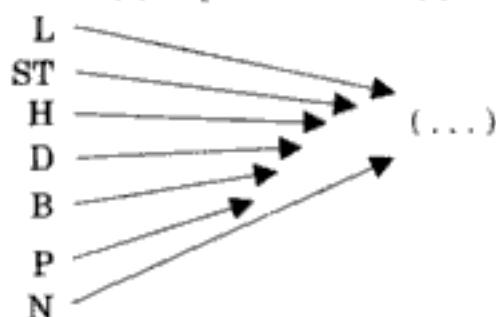
8.

(a) -ope

(b) -ips

(c) -old

(d) -eep



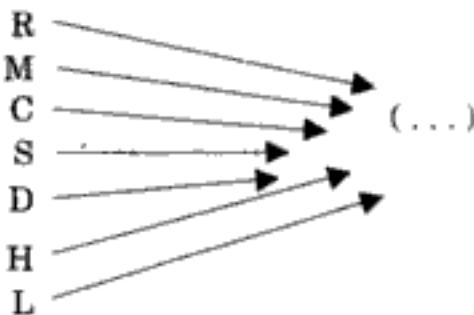
9.

(a) -old

(b) -eap

(c) -ark

(d) -ead



10.

(a) -ock

(b) -ome

(c) -eam

(d) -are

ANSWERS:

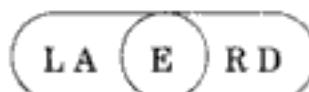
1. (d) -and Brand, Gland, Hand, Land, Strand, Wand
2. (d) -ode Bode, Code, Diode, Erode, Node, Rode
3. (a) -eak Bleak, Creak, Leak, Speak, Teak, Wreak
4. (d) -ice, Rice, Dice, Voice, Spice, Nice, Thrice
5. (b) -eep Sleep, Peep, Bleep, Creep, Deep, Keep, Seep, Weep
6. (c) -ick Sick, Slick, Prick, Lick, Trick, Brick
7. (a) -int Dint, Hint, Lint, Mint, Pint, Tint
8. (c) -ips, Hips, Dips, Sips, Lips, Grips, Skips, Drips
9. (c) -ark Lark, Stark, Hark, Dark, Bark, Park, Nark
10. (a) -ock Rock, Mock, Cock, Sock, Dock, Hock, Lock

TYPE 7: FORMING MEANINGFUL WORDS FROM JUMBLED LETTERS

Here you are given jumbled letters which have to be sorted out and rearranged to form meaningful words. Read carefully the *Directions* given in the beginning of such questions as the scheme for answering them varies.

Illustration

Directions: In each question below, some letters are given in two ovals, intersecting each other. The letter(s) given in the intersected portion can be used more than once; while each of the letters outside the intersected portion is to be used only once to form meaningful word(s). If no such word can be formed, give 'X' as the answer, and if more than one such word can be formed, give 'M' as the answer; otherwise the second letter of the word formed will be the answer.

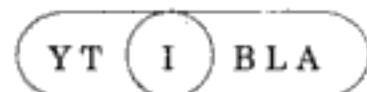


- (a) R (b) D (c) A (d) X (e) M

In the above example, we can use letter 'E' as many times as we need because it is contained in the intersected portion. Letters LA and RD are to be used only once. By rearranging these letters, we obtain two words 'LEADER' and DEALER. Note, each letter is used once only, except 'E'. Since more than one word can be formed, the answer will be (e) M.

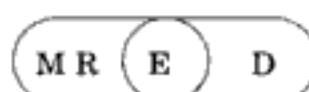
Let us see other examples:

1.



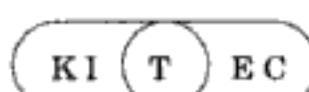
- (a) T (b) B (c) Y (d) X (e) M

2.



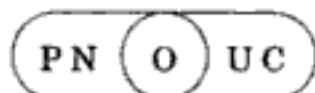
- (a) D (b) E (c) T (d) X (e) M

3.



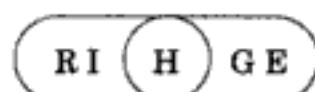
- (a) T (b) I (c) K (d) X (e) M

4.



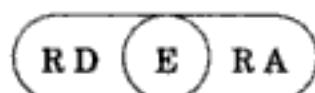
- (a) C (b) U (c) O (d) X (e) M

5.



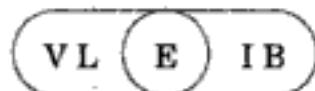
- (a) R (b) G (c) I (d) X (e) M

6.



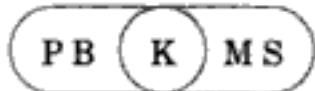
- (a) R (b) B (c) D (d) X (e) M

7.



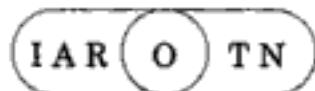
- (a) L (b) B (c) E (d) X (e) M

8.



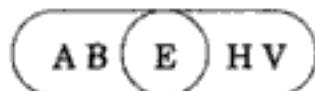
- (a) B (b) M (c) P (d) X (e) M

9.



- (a) T (b) A (c) R (d) X (e) M

10.



- (a) E (b) H (c) B (d) X (e) M

Note: In the above examples as per *Directions*, the second letter of the word formed is to be the answer. You may find in some tests, first, second, third, middle or last letter can be the answer. Therefore, it is essential to read very carefully the *Directions* and understand what is being asked.

ANSWERS

1. (b) B - Ability
2. (b) E - Redeem

3. (b) I - Ticket
4. (c) O - Coupon
5. (c) I - High
6. (e) M - Reader, Rearer, Dearer
7. (c) E - Believe
8. (d) X - As there is no vowel, no word can be formed
9. (b) A - Ration
10. (a) E - Behave

TYPE 8: WORD COMPLETION

In these tests, you are given two letter sets, one each on the left and right hand side of the brackets. In brackets a certain number of dots are given, which represent the number of letters that are required to complete the word. You have to select the word(s) or letter(s) that completes the first word and begins the second.

Illustration

Directions: Insert the word that completes the first word and begins the second
(Clue : Boy)

B A L (. .) D E R

- (a) ers (b) lad (c) ock (d) lies

ANSWER: (b) Lad

Here we have to choose a three-letter set because there are three dots inside the brackets. Choice (d) is eliminated straightaway because it contains four letters. Choices (a) and (c) do not form meaningful words. Hence choice (b) 'lad' is the answer, for which the clue 'boy' also helps. We get the words

B A L L A D and L A D D E R

The underlined letters indicate the end of the first word and beginning of the second word.

Let us see other examples

1. T O R (. .) A I R
 (a) ck (b) ch (c) ess (d) ks
2. T E A (. .) O R E
 (a) cup (b) ch (c) ks (d) ms
3. E X (. . .) A C L E
 (a) pert (b) tant (c) tent (d) ence
4. D E C (. . .) A G E
 (a) odes (b) line (c) all (d) or

5. S T (. . .) P L E
 (a) op (b) rip (c) rap (d) ore
6. A P R (. . .) I O N
 (a) il (b) on (c) ciate (d) cot
7. S T (. . . .) E R
 (a) op (b) ring (c) ore (d) ode
8. A (. . . .) E T
 (a) pox (b) corn (c) ril (d) ct
9. H A M (. . . .) L E S
 (a) mer (b) ed (c) string (d) pered
10. E N C (. . . .) L E S
 (a) rust (b) close (c) ash (d) ashed

ANSWERS

- | | |
|-------------------------------------|--------------------------------|
| 1. (b) ch - Torch/Chair | 2. (b) ch - Teach/Chore |
| 3. (c) ent - Extent/Tentacle | 4. (b) line - Decline/Lineage |
| 5. (b) rip - Strip/Ripple | 6. (b) on - Apron/Onion |
| 7. (b) ring - String/Ringer | 8. (b) corn - Acorn/Cornet |
| 9. (c) string - Hamstring/Stringent | 10. (a) rust - Encrust/Rustles |

TYPE 9: FINDING SIMILAR OR DISSIMILAR WORDS

In these tests, you are given two words outside the brackets. You have to fill in the brackets with a word which has a similar meaning as that of the words outside the brackets.

Illustration

Directions : Select an appropriate set of letters which forms a word having similar meaning (may be in different context) as that of the words on the right and left-hand side of the brackets

- C R O W D (. . . .) N E W S P A P E R
 (a) gather (b) press (c) daily (d) fortnightly

Here there are five dots inside the brackets, which means that the word we have to fill inside the brackets should have only five letters. In a crowd, people are *pressed* and *press* also means newspaper. Therefore, the correct answer here is (b) *press*.

Now let us see other examples:

1. N I C E (. . .) P U N I S H
 (a) good (b) fine (c) clean (d) time
 2. D I G E S T (.) A S S I M I L A T E
 (a) food (b) meals (c) inject (d) reject
 3. N E W (. . . .) T A L E
 (a) fresh (b) novel (c) anew (d) fine
 4. INCLINE (. . .) NOT FAT
 (a) bent (b) lean (c) band (d) curl
 5. FINAL (. . .) ULTIMATE
 (a) last (b) finish (c) end (d) dead
 6. BEAKER (. . .) CHALICE
 (a) jug (b) mug (c) cup (d) tube
 7. ABSTAIN (.) CHORUS OF A SONG
 (a) refrain (b) phrase (c) verse (d) avoid
 8. CUT (. . . .) OPENING
 (a) sharp (b) wound (c) slit (d) puncture
 9. FLAME (. . . .) SHOOT
 (a) candle (b) fire (c) stove (d) lamp
 10. SHAPE (.) FORM
 (a) appear (b) design (c) class (d) group
- ANSWERS**
1. (b) fine
 2. (c) inject
 3. (b) novel
 4. (b) lean
 5. (c) end
 6. (c) cup
 7. (a) refrain
 8. (c) slit
 9. (b) fire
 10. (b) design

TYPE 10: JUMBLED WORDS

In verbal ability tests, there may be questions on jumbled words. You have to first rearrange the jumbled letter in proper order to form a meaningful word and then answer the question as directed under 'Directions' given in the beginning of the question.

Illustrations

Directions: Find the odd man out in the following anagrams.

- (a) T H R S I
 (c) E O U B S L
 (e) R E T A E W S

- (b) A O T C
 (d) K T R I S

ANSWER: (d) By rearranging the jumbled letters in each of the choices, we get the words:

- | | | |
|-----------|-------------|------------|
| (a) shirt | (b) coat | (c) blouse |
| (d) skirt | (e) sweater | |

The words given in choices (a), (b), (c) and (e) are garments for upper part of the body, except choice (d) skirt, which covers the lower part of the body.

Let us see other examples:

- | | |
|----------------------|-----------------------|
| 1. (a) P E N O H | (b) D R O I A |
| (c) T S P O | (d) G N D R E A |
| 2. (a) O S R E | (b) L O W E U S N F R |
| (c) P L U T I | (d) S E K D |
| 3. (a) E H D L I | (b) U N E P |
| (c) Y B B M O A | (d) O O S W C M |
| 4. (a) S C H A M O T | (b) L A B L O T O F |
| (c) C E K T I C R | (d) S N I N E T |
| 5. (a) I F A R | (b) T L A A |
| (c) K E S H U M | (d) T I N L O M |
| 6. (a) T E A D S | (b) L E P A P S |
| (c) S O T R A C R | (d) R E S H I C E R |

Answers and Explanations

- (d) GARDEN; All the others are form of communication: phone, radio, post.
- (d) DESK; All the others are flowers : rose, sunflower, tulip.
- (d) MOSCOW; All the others are Indian cities: Delhi, Pune, Mumbai.
- (a) STOMACH; All the others are ball games: football, cricket, tennis.
- (d) MILTON; All others are singers: Rafi, Lata, Mukesh.
- (d) CHERRIES; All other words have 'a' in them: dates, apples, carrots.

Practice Questions

Directions: In each of the following questions, there are five choices (a-e) of words with their letters jumbled up. Four of them are alike and one is different. Find the odd man out.

1. (a) Y N D S U A (b) M D O A N Y
(c) H I O D A L Y (d) Y F D R I A
(e) U R A T S Y A D

2. (a) K I T C C R E (b) S S H E C
(c) Y E K H O C (d) L L O O B F T A
(e) Y B A L L V O E L L

3. (a) G E R I T (b) P O E L D R A
(c) C A D W I L T (d) X O F
(e) G O U C A R

4. (a) F I W E (b) L A M E
(c) F L A M E E (d) B U S H D N A
(e) H E S

5. (a) T T R L E E (b) X B O
(c) K O O B (d) T O P
(e) R A N G E O

6. (a) N O R I (b) R I V E L S
(c) C I N Z (d) R E C O P P
(e) S B R A S

7. (a) M I T E (b) M O O R
(c) N O S P E R (d) N O R S E A
(e) J B E C T O

8. (a) I T S (b) T I H
(c) T I K (d) F I T
(e) N I T K

9. (a) L U Y J (b) E R B M E T P E S
(c) R E M V O N B E (d) C E D B E R M E
(e) T O C O R E B

10. (a) C A F R I A (b) A A T U S A L I R
(c) A A S I (d) R O P E U E
(e) I I N D A

Answers and Explanations

1. (c) HOLIDAY; All others are days of a week Sunday, Monday, Friday and Saturday
2. (b) CHESS; Its an indoor game, all other CRICKET, HOCKEY, FOOTBALL & VOLLEY BALL are outdoor games
3. (b) LEOPARD; all other belong to the cat family, TIGER, WILDCAT, FOX, COUGAR
4. (d) HUSBAND; all others end with vowel 'e' — WIFE, MALE, FEMALE, SHE
5. (e) ORANGE; all others end with a consonant LETTER, BOX, BOOK, POT
6. (e) BRASS; Brass is an alloy, but all other are metals — IRON, SILVER, ZINC, COPPER
7. (b) ROOM; all are answers to questions: Who, What, When, Where except ROOM which is non-generic
8. (c) KIT; Kit is a noun, and all others are verbs SIT, HIT, FIT, KNIT
9. (a) JULY; All other end with 'BER' — SEPTEMBER, NOVEMBER, DECEMBER, OCTOBER
10. (e) INDIA; all other are names of continents — AFRICA, EUROPE, AUSTRALIA, ASIA
11. (a) LITRES; it measures volume, all other measures weights GRAMS, KILOGRAMS, TONNES, QUINTAL
12. (e) GOLD; other are name of colours.

Note: The word here is GOLD and not GOLDEN
VOILET, GREEN, RED, BLUE

13. (a) MOON (moon is a satellite. Other than planet — SATURN, VENUS, EARTH, MERCURY)
14. (e) QUART; unit to measure liquids, others are length measurements — INCH, FOOT, YARD, METRE
15. (e) CYCLE; all others are parts of the cycle — HANDLE, CHAIN, MUDGUARD, SPOKES
16. (e) RICE; others are rain related phenomenon — THUNDER, CLOUDS, RAIN, LIGHTING
17. (c) GREATER; All words can be formed from letters of the word TEACHER as CHEAR, CHEATER, CREAT
18. (a) COLOURS; all others are names of different colours — GREEN, ORANGE, BLACK, PINK
19. (d) EDUCATED; All other options have 3 vowels, but it has 4 vowels — QUALITY, QUANTITY, QUALIFY, BEAUTY
20. (c) CARPET; It is a floor spread, others are objects to sit on — CHAIR, SOFASET, BENCH, STOOL

Section 5 Verbal Practice Tests

TEST PAPER - 1

Directions: Select from the answer choices an appropriate term to replace the question mark and continue the sequence of the series.

Directions: In each of the following questions four terms are given, marked a-d. While three of them are identical in some way, one is odd or different from the rest. Select the odd one out as your answer.

- 9.** (a) 3 2 5 8 (b) 6 4 5 3 (c) 4 3 3 8 (d) 5 8 7 5
10. (a) 5 7 8 5 (b) 6 4 7 9 (c) 8 5 7 5 (d) 6 6 8 5
11. (a) 6 3 2 7 (b) 5 6 4 3 (c) 4 8 3 3 (d) 6 4 9 2
12. (a) 5 8 7 8 (b) 6 4 8 2 (c) 5 7 8 8 (d) 9 7 4 8
13. (a) 4 6 5 3 (b) 3 6 5 4 (c) 6 4 3 5 (d) 5 4 7 3
14. (a) 7 6 8 9 (b) 6 5 8 7 (c) 9 7 6 8 (d) 8 6 7 9

- 15.** (a) 3 2 4 5 (b) 5 3 2 4 (c) 5 4 3 2 (d) 3 5 6 4
16. (a) 9 3 5 3 (b) 3 5 9 3 (c) 5 9 3 4 (d) 5 3 9 3

Directions: In each of the following questions there are four terms, marked a-d. While three of the terms are similar and form a separate class, one of them does not belong to that class. Select the term that does not belong to the class.

- 17.** (a) Five-rupee note (b) Ten-rupee note
 (c) Hundred-rupee note (d) One-rupee note
- 18.** (a) 2nd October (b) 15th August
 (c) 13th April (d) 26th January
- 19.** (a) Bucket (b) Hat
 (c) Basket (d) Bag
- 20.** (a) Pigeon (b) Crow
 (c) Bat (d) Parrot
- 21.** (a) State Bank of India (b) Punjab National Bank
 (c) Reserve Bank of India (d) United Commercial Bank
- 22.** (a) Physician (b) Lawyer
 (c) Nurse (d) Surgeon
- 23.** (a) UNICEF (b) SAARC
 (c) IMF (d) WHO
- 24.** (a) Bharat Ratna (b) Padma Shri
 (c) Padma Bhushan (d) Ashok Chakra

Directions: The numbers in the following series follow a definite pattern/sequence. Identify the pattern/sequence and select from the answer choices an appropriate number to replace the question mark.

- 25.** 6, 7, 9, 12, 16, 21, ?
 (a) 25 (b) 28 (c) 27 (d) 29
- 26.** 8, 9, 11, 14, 18, ?, 29
 (a) 19 (b) 20 (c) 22 (d) 23
- 27.** 5, 11, 23, 47, 95, ?
 (a) 105 (b) 145 (c) 147 (d) 191

28. 3, 7, 15, 31, ?, 127

- (a) 35 (b) 63 (c) 91 (d) 93

29. 5, 11, 24, 51, 106, ?

- (a) 115 (b) 122 (c) 217 (d) 221

30. 6, 13, 28, 59, 122, ?

- (a) 129 (b) 202 (c) 239 (d) 249

31. 5, 2, 7, 9, 16, 25, ?

- (a) 41 (b) 52 (c) 48 (d) 45

32. 3, 1, 4, 5, 9, 14, ?

- (a) 28 (b) 34 (c) 23 (d) 37

Directions: In a certain code the word BOOK is written as C Q R O and the word R E S T is written as S G V X. Identify the coding scheme and, based on it, provide codes for the following words. Select an appropriate code from the four alternative choices marked a-d given under each word.

33. R O P E

- (a) F Q P S (b) S P Q F (c) E P O R (d) S Q S I

34. M O R N

- (a) N Q U R (b) N R O M (c) N P S O (d) O S P N

35. P R O N E

- (a) E N O R P (b) Q T R R J (c) Q S P O F (d) F O P S Q

36. T O R N

- (a) U P S O (b) O S P U (c) U Q U R (d) R U Q U

37. S H O R T

- (a) T R O H S (b) T I P S U (c) U S P I T (d) T J R V Y

38. G R A I N

- (a) H T D M S (b) H S B J O (c) O J B S D (d) M S D T Q

Directions: In each of the following questions, you are given one term followed by four alternatives, marked a-d. Select from the alternatives an appropriate term that is identical to the term given in the question.

39. S U W Y

- (a) B D F G (b) G J M P (c) L N P R (d) T S U X

40. P R U Y

- (a) D F H J (b) D F I O (c) P R T V (d) G I L P

41. L P T X

- (a) B F H K (b) C G K O (c) L O R Z (d) M O Q S

42. G I L P

- (a) P S U W (b) F J M O (c) B D G K (d) R T V X

43. L N Q S

- (a) P S U W (b) F J M O (c) D G J N (d) B D G I

44. G L Q V

- (a) R X Z B (b) S U W X (c) B G L Q (d) G K N P

45. G J M P

- (a) R T V X (b) P R U X (c) H K O U (d) B E H K

46. If BAG = 30 and BAD = 21, then DEED = ?

- (a) 18 (b) 36 (c) 62 (d) 72

47. If DEEP = 120 and HOPE = 176, then FADE = ?

- (a) 160 (b) 150 (c) 64 (d) 103

48. If HIGH = 128 and LOW = 150, then FAR = ?

- (a) 130 (b) 142 (c) 75 (d) 98

49. If JOKE = 164 and LOVE = 216, then HATE = ?

- (a) 180 (b) 140 (c) 139 (d) 136

50. What is once in TEA and twice in COFFEE but not in MILK?

- (a) Sugar (b) Flavour (c) The letter E (d) Water

Answers and Explanations

- (a) S. There are two series, viz A (B) C (D) E (F) G and P, Q, R, S. Letters in brackets indicate the letters skipped.
- (d) O. There are two series, viz C (D) E (F) G (H) I and L, M, N, O.
- (c) F. Taken from backward sequence, the number of letters skipped increases by one each time, i.e.:
Z (Y) X (WV) U (TSR) Q (PONM) L (KJIHG) F.
- (a) W. First one and then two letters are skipped alternatively, i.e. H (I) J (KL) M (NO) (PQ)R and so on.

5. (c) T. First one, then two and then three letters are skipped each time B(C)D (EF) G (HIJ)K (L).
6. (d) Y. Two letters are skipped each time, G (HI) J (KL) M.
7. (b) Z. Starting from five letters, the letters skipped decrease by one each time F (GHIJK) L (MNOP) Q (RST) U (VW) X (Y) Z.
8. (b) F. Same as above.
9. (d) 5 8 7 5. The sum of all digits is 18, except of (d).
10. (b) 6 4 7 9. The sum of all digits is 25, except of (b).
11. (d) 6 4 9 2. The sum of numbers in the other choices is 18.
12. (b) 6 4 8 2. The sum of all others is 28.
13. (d) 5 4 7 3. All other terms consist of digits 3, 4, 5 and 6.
14. (b) 6 5 8 7. All other terms consists of digits 6, 7, 8 and 9.
15. (d) 3 5 6 4. All other terms consists of digits 2,3,4 and 5
16. (c) 5 9 3 4. All other terms consists of digits 3,3,5 and 9.
17. (d) Except the one-rupee note, all currency notes of higher denominations are issued by Reserve Bank.
18. (c) Except 13th April, all other dates are National holidays.
19. (b) Except hat, all others are used to carry goods.
20. (c) Except bat which is a mammal, all the other animals given here come under the class of aves.
21. (c) All other banks are supervised by the Reserve Bank and are called commercial banks.
22. (b) All other professions are connected with the medical profession, except lawyers.
23. (b) Except SAARC, all others are agencies of UNO.
24. (d) Ashok Chakra is a gallantry award. Other awards are civilian or Republic Day awards.
25. (c) 27. The numbers increase @ +1, +2, +3, +4 and so on.
26. (d) 23.
27. (d) 191. Multiply by 2 and add 1.
28. (b) 63.
29. (c) 217. Multiply by 2 and add +1, +2, +3, +4, and so on.
30. (d) 249. Same as above.
31. (a) 41. Starting from 2, the next term is the sum of the previous two numbers.
32. (c) 23. Same as above.

(For Q.No. 33 to 38)

For coding BOOK and REST, the first letter of the word is moved one place forward, the second letter two places forward and so on, i.e.

B = C, O = (P) Q, O = (PQ) R and K = (LMN) O

R = S, E = (F) G, S = (TU) V and T = (UVW) X

Based on the above coding scheme, the codes for the other words may be obtained.

- | | |
|---------|---|
| 33. (d) | SQSI |
| 34. (a) | MQUR |
| 35. (b) | QTRRJ |
| 36. (c) | U Q U R |
| 37. (d) | T J R V Y |
| 38. (a) | H T D M S |
| 39. (c) | L N P R Terms are formed by skipping one letter. |
| 40. (d) | G I L P First one, then two and then three letters are skipped. |
| 41. (b) | C G K O. Three letters are skipped. |
| 42. (c) | B D G K. Same as in Question No. 40. |
| 43. (d) | B D G I. First one and then two letters are skipped. |
| 44. (c) | BGLQ. Four letters are skipped. |
| 45. (d) | BE H K Two letters are skipped. |

(For Q. No. 46 to 49)

The positions of the letters in the alphabet are added up and multiplied by the number of letters in each word. For example, BAG = $2 + 1 + 7 = 10 \times 3 = 30$.

- | |
|--------------------|
| 46. (d) 72 |
| 47. (c) 64 |
| 48. (c) 75 |
| 49. (d) 136 |
| 50. (c) Letter 'E' |

TEST PAPER - 2

Directions: In each group of words given below, there is one that has less in common than others. Identify that word.

1. (a) Cloud (b) Lake (c) Snow (d) Stream (e) Sky
2. (a) Venus (b) Mars (c) Saturn (d) Moon (e) Jupiter
3. (a) Flower (b) Stem (c) Root (d) Bud (e) Leaf
4. (a) Cup (b) Glass (c) Mug (d) Pottery (e) Beaker
5. (a) Wheel (b) Rope (c) Chain (d) Idea (e) Bus
6. (a) Write (b) Imagine (c) Think (d) Mediate (e) Dream
7. (a) Sigh (b) Cough (c) Talk (d) Sniff (e) Gas
8. (a) Silk (b) Weave (c) Wool (d) Warp (e) Weft
9. (a) Cooler (b) Feel (c) Dream (d) Looked (e) Beer
10. (a) Cabin (b) Chamber (c) Room (d) Veranda (e) Bed-room

Directions: In each of the following questions, one term is given which is followed by four alternative terms, marked a-d. Select from the alternatives the term that has the same characteristics as the term given in the question.

11. P S V

- (a) F J O (b) L O Q (c) L O R (d) C J N

12. K N Q

- (a) D H K (b) D G J (c) L O W (d) N P R

13. D G J

- (a) C K (b) L O S (c) K N P (d) R U X

14. L P T

- (a) F L (b) M P S (c) B E I (d) G K O

15. D H L

- (a) N R U (b) N R V (c) F I L (d) R V X

16. R V Z

- (a) F I K (b) I M P (c) G K O (d) P S V

17. R U Y

- (a) P S V (b) G J M (c) K N R (d) F I N

18. L O S

- (a) B E K (b) F I P (c) Q T W (d) P S W

Directions: Select from the answer choices an appropriate number to replace the question mark and continue the series.

Directions: In each of the following questions, four terms are given, marked (a), (b), (c) and (d). Three of these are identical in some way and one is different from the rest (odd). Identify the term that is different or odd.

Directions: The two terms on the left have some relationship between them. Identify the relationship and select from the alternatives given under each question, an appropriate term to replace the question mark to obtain a similar relationship between the terms on the right.

36. B F : G K :: L P : ?

- (a) K L (b) MO (c) QU (d) RO

37. A S T : B R U :: N Q V

- (a) G H I (b) L N P (c) O P W (d) K M Q

38. B D F H : O M K I :: E G I K : ?

- (a) LNOR (b) RPNL (c) SUWX (d) RQNL

39. DE : 4-5 :: BC : ?

- (a) 3-5 (b) 8-7 (c) 2-3 (d) 4-6

40. F H : 6-8 :: DG : ?

- (a) 7-2 (b) 4-7 (c) 4-8 (d) 3-4

41. F I L : D G J :: R U X : ?

- (a) B D F (b) G I K (c) P S V (d) L V P

42. P R Q : S U T :: G I H : ?

- (a) K M N (b) K M L (c) L K M (d) P R T

Directions: In each of the following questions (43-50), a word has been written in a code language. This code equivalent of the word is one of the four code languages in which the word RAILWAY has been written against (a), (b), (c) and (d). The alternative with the code language in which both RAILWAY and the word under consideration have been written is your answer.

R A I L W A Y

(a) Y A W L I A R (b) S B J M X B Z

(c) L R A I W A Y (d) L W A Y R A I

43. W R I T T E N : N E T T I R W

44. G A T E W A Y : E G A T W A Y

45. S C H O O L : T D I P P M

46. L E T T E R S : T E R S L E T

47. P O S T A L : L A T S O P

48. R O M A N C E : S P N B O D F

49. O P P O S I T E : O O P P S I T E

50. C A L L E D : D B M M F E

Answers and Explanations

- 1.(e) Sky. All other words describe various states of water.
- 2.(d) Moon. All others are planets, moon is a satellite.
- 3.(c) Root. All other parts of the plant are above the ground.
- 4.(d) Pottery. All others are containers.
- 5.(d) Idea. All others are tangible items.
- 6.(a) Write. All other words are abstract (remain in mind only).
- 7.(c) Talk. All other words are concerned with breathing.
- 8.(a) Silk. All other forms of fibre are written with initial W.
- 9.(c) Dream. In all other words, there are two similar vowels in the middle.
- 10.(d) Veranda. All others are four-wall constructions.
- 11.(c) L O Q. Two intervening letters are skipped.
- 12.(b) D G J. Same as above.
- 13.(d) R U X. Same as above.
- 14.(d) G K O. Three intervening letters are skipped.
- 15.(b) N R V. Same as above.
16. (c) G K O. Same as above.
- 17.(c) K N R. Letters skipped are 2 and 3 R (ST) U (VWX) Y.
- 18.(d) P S W. Same as above.
- 19.(c) 95. Multiply by 2 and add 1.
- 20.(b) 127. Multiply by 2 and add 1.
- 21.(c) 191. Multiply by 2 and add 1
- 22.(c) 153. Multiply by 2 and add 1, then 2, then 3 and so on.
- 23.(d) 121. Same as above.
- 24.(a) 313. Same as above.
- 25.(d) 409. Same as above.
- 26.(d) 3458 All other numbers total up to 15.
- 27.(c) 3761. All other numbers total up to 10.
- 28.(c) 7389. All other numbers are formed of digits 6, 7, 8 and 9.
- 29.(d) 3567. All other numbers are formed by 3, 4 and 6 digits.
- 30.(d) Q T W. In all other terms, one intervening letter is skipped.
- 31.(d) O. All other letters are formed by straight lines.
- 32.(c) K M O. In all other terms two intervening letters are skipped.
33. (b) C E G. First one letter and then two letters are skipped in each term.
P (Q) R (ST) U.

- 34.(d) R. All others are vowels.
- 35.(b) D G I. In all other terms, three intervening letters are skipped.
- 36.(c) Q U. Three intervening letters are skipped.
- 37.(c) O P W. First and third letter in each term are in alphabetic order and the second letter is in alphabetic order from the backward sequence.
- 38.(b) R P N L. One intervening letter is skipped in each term.
- 39.(c) 2-3. Alphabetic position numbers of letters in the first term are given as second term.
- 40.(b) 4-7. Same as above.

41.(c) P S V. Two intervening letters are skipped.

42.(b) K M L. Letters are in alphabetic order, and letters written in sequence of 1, 3 and 2.

(For questions 43 to 50).

'RAILWAY' has been coded in four ways, i.e.

- (A) Letters are written in reverse order, R A I L W A Y = Y A W L I A R.
- (B) Each letter is coded by taking the next letter in the alphabet, i.e. R = S, A = B, I = J, L = M and so on.
- (C) The letter in the middle is written in the beginning (i.e. L) then the first three (RAI) and then last three (WAY) are added.
- (D) The letter in the middle is written in the beginning (i.e. L) then the last three (WAY) and then first three (RAI).

The above coding arrangements are used for words in questions 43 to 50 as follows

43. (a) 44. (c) 45. (b) 46. (d) 47. (a) 48. (b) 49. (c) 50. (b)

TEST PAPER - 3

Directions: In each of the following questions, letters are given in a specific pattern forming a series, under which four alternatives are given marked a-d. Identify the pattern and select from the answer choices an appropriate term to replace the question mark(?) and continue the pattern

1. P, U, R, S, T, Q, V, O, ?
 (a) P, Q (b) L, P (c) W, M (d) X, M
2. C, R, E, P, G, N, I, L, ?
 (a) L, O (b) P, S (c) K, J (d) R, U
3. FS, GR, HQ, IP, JO, ?
 (a) KMP (b) LM (c) KN (d) PW
4. BDC, EGF, HJI, KML, ?
 (a) PQS (b) MPO (c) NPO (d) QST
5. BFD, GKI, KQM, QUS, ?
 (a) VZX (b) TVX (c) RTV (d) WYZ
6. LN, PR, TV, XZ, BD, ?
 (a) EJ (b) FH (c) GI (d) FJ
7. MOQ, RTV, WYA, BDF, ?
 (a) HJL (b) CEG (c) GIK (d) GIL
8. DHF, IMK, NRP, SWU, ?
 (a) TUW (b) UWZ (c) XHZ (d) XCY

Directions: In each of the following questions there are five terms (words), three of which are identical in some way and one is different (odd) from the rest. Identify the term which is different from the rest.

9. (a) Carrot (b) Potato (c) Spinach (d) Turnip
10. (a) Grey (b) Red (c) Yellow (d) Violet
11. (a) Chisel (b) Cut (c) Chip (d) Fold
12. (a) January (b) March (c) July (d) September
13. (a) Coat (b) Socks (c) Shirt (d) Jacket
14. (a) Raincoat (b) Umbrella (c) Gum boots (d) Sari

Directions: The numbers given in the following questions have a specific pattern. Select from the answer choices provided under each question, the term to replace the question mark and continue the pattern.

Directions: In each of the following questions, one term is given, under which four alternative terms marked (a), (b) (c) and (d) are given. Select from the alternatives the term that is similar to the term given in the question.

23. L N Q U
(a) P R T W (b) G I K M (c) M O P V (d) G I L P

24. P R U Y
(a) L O Q N (b) K M P T (c) F I K G (d) B E H L

25. D H K M
(a) F J M O (b) L N P Q (c) D G M L (d) N O O J

26. K O R T
(a) F H I K (b) O P T V (c) L I U X (d) B F I K

27. F I K N
(a) J M R T (b) D W F G (c) I L N Q (d) G L Q C

28. P R U Y
(a) B E K L (b) N P W X (c) M O R V (d) k P E C

- 29. G J N S**
(a) D, G, K, O (b) G, J, O, Q (c) L, G, T, P (d) F, N, U, I

30. K N Q T
(a) B F G K (b) L N P R (c) L O T W (d) L O R U

Directions: In each of the following questions, there are three rows of figures. In each row there are three sets of numbers, two of which are outside the brackets and one is enclosed in the brackets. In the third row, there is a question mark enclosed in the brackets. Select from the alternatives given under each question, an appropriate set of numbers to replace the question mark.

Directions: In each of the following questions, four groups of numbers are given under (a), (b), (c) and (d). While three of them are identical in some way, one is different from the rest. Select the one which is different (odd).

- | | | | |
|--------------|----------|----------|----------|
| 37. (a) 3456 | (b) 4536 | (c) 6374 | (d) 5346 |
| 38. (a) 2972 | (b) 2764 | (c) 6742 | (d) 2764 |
| 39. (a) 3627 | (b) 7362 | (c) 6372 | (d) 7245 |
| 40. (a) 3246 | (b) 5346 | (c) 3372 | (d) 5811 |
| 41. (a) 3656 | (b) 9164 | (c) 8543 | (d) 6987 |
| 42. (a) 6457 | (b) 8453 | (c) 6473 | (d) 3863 |
| 43. (a) 8326 | (b) 6382 | (c) 2836 | (d) 3769 |
| 44. (a) 3546 | (b) 4365 | (c) 5346 | (d) 6793 |

Directions: (Q. No. 45 to 48). In a certain coding system, PAPER is written P E R P A and SUBJECT as J E C T S U B, how will you code the following words ?

45. DIRECTION

- | | |
|---------------|---------------|
| (a) NOTICERID | (b) CDIRETION |
| (c) CTIONDIRE | (d) CDIRTIONE |

46. CERTAIN

- | | |
|-------------|-------------|
| (a) NIATREC | (b) TCERAIN |
| (c) TAINCER | (d) TERAICN |

47. EXPORTS

- | | |
|-------------|-------------|
| (a) STROPXE | (b) EPXORTS |
| (c) ORTSEXP | (d) REXTSOP |

48. COUNCIL

- | | |
|-------------|-------------|
| (a) NCILCOU | (b) LICNOUC |
| (c) NCOUCIL | (d) NLICUOC |

49. If STRIKE = 12 and PORTERS = 14, then TELEPHONE = ?

- | | | | |
|--------|--------|--------|--------|
| (a) 10 | (b) 18 | (c) 13 | (d) 15 |
|--------|--------|--------|--------|

50. If CANCELLED = 27 and POSTPONEMENT = 36, then REVIVE = ?

- | | | | |
|--------|--------|--------|-------|
| (a) 12 | (b) 18 | (c) 15 | (d) 6 |
|--------|--------|--------|-------|

Answers and Explanations

- 1.(d) XM. There are two series P (Q) R (S) T (U) V (W) and M (N) O (P) Q (R) S (T) U. The second series is written in reverse. Letters in brackets are the ones which are skipped.
- 2.(c) KJ. There are two series C (D) E(F) G (H) I (J) K and J (K) L (M) N (O) P (Q) R.
- 3.(c) KN. There are two series. F, G, H, I, J and N, O, P, Q, R, S.
- 4.(c) NPO. In each term, there are three letters and the third letter in alphabetic order is written in second place, the second letter in the third place.
- 5.(a) VZX. One intervening letter is skipped and the third letter goes in the middle.
- 6.(b) FH. One intervening letter is skipped and letters continue in alphabetic order.
- 7.(c). GIK. In each term one intervening letter is skipped.
- 8.(c) XBZ. In the first and last letters in each term. One intervening letter is skipped (e.g. D(e)F; I(j)K; N(o)P; S(t)U. The letters in the middle have four letters skipped (e.g. H(ijkl)M (nopq)R (stuv) W(xyz) B).
- 9.(c) Spinach. All other vegetables grow under the ground.
- 10.(a) Grey. All other are spectrum colour (rainbow).
- 11.(d) Fold. By all other actions the material is broken.
- 12.(d) Sept. All other months have 31 days.
- 13.(b) Socks. All other garments are put on the upper part of the body.
- 14.(d) Sari. All other items are used for protection from rain.
- 15.(a) Peas. All other vegetables grow under the ground.
- 16.(c) Liver. All others are body organs; liver is a gland.
- 17.(c) 127. Multiply by 2 and add 1.
- 18.(b) 65. Multiply by 2 and reduce 1.
- 19.(c) 129. Same as above.
- 20.(a) 191. Multiply by 2 and add 1.
- 21.(c) 608. Multiply by 3 and reduce 1.
- 22.(b) 365. Same as above.
- 23.(d) GILP. Letters skipped at the rate of 1, 2, 3, i.e. L (M) N (OP) Q (RST)U.
- 24.(b) KMPT. Same as above.
- 25.(a) FJMO. Letters are skipped at the rate of 3:2:1 i.e. D (EFG)H(IJ)K (L)M.
26. (d) BFIK. Same as above.

- 27.(c) ILNQ. Letters skipped at the rate of 2:1:2.
 28.(c) MORV. Letters skipped at the rate of 1:2:3.
 29.(a) DGKO. Letters skipped at the rate of 2:3:4.
 30.(d) LORU. Letters skipped at the rate of 2:2:2.
 31.(d) 461. Add the numbers outside the brackets and the sum is enclosed in the brackets.
 32.(b) 637. Same as above.
 33.(c) 27. Individual numbers outside the brackets are added up i.e. $3 + 2 + 1 = 6$ = and $4 + 5 + 2 = 11$ and then $6 + 11 = 17$. The sum is enclosed in brackets.
 34.(b) 22. Same as above.
 35.(c) 246. Deduct the numbers on the right side of the brackets from the numbers on the left side and place the sum within brackets.
 36.(d) 209. Same as above.
 37.(c) 6374. All other numbers are made up of digits 3,4,5 and 6.
 38.(a) 297. All the other numbers are made up of 2,4,6 and 7.
 39.(d) 7245. All other numbers are made up of 2,3,6 and 7.
 40.(b) 5346. All other numbers total up to 15.
 41.(d) 6987. All other numbers total up to 20.
 42.(a) 6457. All other numbers total up to 20.
 43.(d) 3769. All other numbers are made up of 2,3,6 and 8.
 44.(d) 6793. All other numbers are made up of 3,4,5 and 6.

(For Q.No. 45 to 48).

Each word is coded by writing the central letter in the beginning and then adding the letters of the right hand side and left hand side. PAPER = P + ER + PA = PERPA. Based on this coding scheme, the words in the questions can be coded as:

- 45.(c) 46.(c) 47.(c) 48.(a)

(For Q.No. 49).

Number of letters in each word is multiplied by two to get the coded number.

- 49.(b) 18.

- 50.(b) 18. Number of letters in the word is multiplied by three.

TEST PAPER - 4

Directions: In each of the following questions, letters are arranged in a specific pattern forming a series. Identify the pattern and select from the answer choices an appropriate letter to replace the question mark (?)

Directions: In each of the following questions, numbers are given in a specific pattern forming a series. Identify the pattern and choose from the answer choices a number to replace the question mark (?) and continue the series

Directions: In the following questions, certain words (names of rivers, countries, leaders, metals, etc.) are given in jumbled form. Rearrange the jumbled letters and form meaningful words and identify the odd one among them.

Directions: In each of the following questions, two words are given in capital letters separated by a colon and have a certain relationship. Identify the relationship they have and select from the answer choices a pair of words which have similar relationship.

25. TAJ MAHAL : AGRA

- (a) Amritsar : Golden Temple (b) Red Fort : Delhi
 (c) Delhi : Qutab Minar (d) New Delhi : India Gate

Directions: Select from answer choices a number to replace the question mark.

26. 5, 13, 8

- 12, 17, 5
 8, ?, 7
 (a) 9 (b) 12 (c) 15 (d) 56

27. 13, 35, 22

- 21, 67, 46
 11, ?, 18
 (a) 188 (b) 88 (c) 38 (d) 29

28. 15, 18, 3

- 6, ?, 9
 23, 35, 12
 (a) 15 (b) 18 (c) 30 (d) 21

29. 9, 30, 21

- 6, ?, 14
 12, 40, 28
 (a) 20 (b) 33 (c) 37 (d) 70

30. In a certain code, TAJ MAHAL is coded as U B K N B I B M, how will you code LAL KILA ?

- (a) M B M L G M B (b) M B M L J M B
 (c) K Z K J H K Z (d) M B M L K M B

31. In a certain code, CLIMATE is coded as F U B N J M D, how will you write WEATHER ?

- (a) S F J U B F X (b) X F B U G F X
 (c) X F B U I F S (d) S F I U B F X

Directions: (Q. 32 to 43). In each of the following questions, four terms are given, marked a-d. While three of them are identical in some way, one is odd or different from the rest. Select the odd one out as your answer.

32. (a) 17 (b) 19 (c) 89 (d) 38**33. (a) 9 (b) 21 (c) 86 (d) 15****34. (a) 68 (b) 67 (c) 38 (d) 86**

Directions: In each of the following questions, there are four words, marked a-d. While three of them are related to each other in some way or the other, one is different. Select the one that is different from the rest.

Answers and Explanations

- 1.(b) R. The first three letters are in alphabetic order and the next three in reverse alphabetic order.

2.(c) D. Same as above.

3.(d) L. The first three letters are in reverse alphabetic order and the next three in alphabetic order.

4.(c) R. Same as above.

5.(b) D. In each unit of three letters in alphabetic order, one letter is skipped between the first two letters.

6.(b) 9. There are two series 3, 6, 9, 12 and 3, 5, 7, 9.

7.(a) 13. There are two series 2, 3, 4, 5 and 4, 7, 10, 13.

8.(d) 3. There are two series

15 (-4) 11 (-4) 7 (-4) 3 and

15 (-2) 13 (-2) 11 (-2) 9.

9.(d) 9, 5. There are two series

19 (-1) 18 (-2) 16 (-3) 13 (-4) 9 and

15 (-4) 11 (-3) 8 (-2) 6 (-1) 5.

10.(b) 10,10. There are two series.

20 (-1) 19 (-2) 17 (-3) 14 (-4) 10 and

20 (-4) 16 (-3) 13 (-2) 11 (-1) 10.

11.(d) 5,25. There are two series.

15 (-1) 14 (-2) 12 (-3) 9 (-4) 5 and

15 (+1) 16 (+2) 18 (+3) 21 (+4) 25.

12.(d) All others when rearranged gives names of cities — Kanpur, Lucknow and Nagpur, whereas (d) is a river — Sutlej.

13.(d) All others are metals whereas (d) is paper.

14.(c) All others are countries — Africa, Albania, Japan, whereas (c) is a town, Madras.

15.(c) All others are colours — blue, green, yellow, whereas (c) is pencil.

16.(c) All others are rivers — Ganga, Jamuna, Tapti, whereas (c) is Nehru.

17.(d) All others are leaders — Gandhi, Nehru, Lajpat Rai whereas (d) is colour (black).

18.(d) All others are animals — horse, rabbit, tiger whereas (d) is a bird (peacock).

19.(c) All others are sciences — Physics, botany, zoology whereas (c) is doctor.

20.(b) All others are parts of the body — liver, heart, lungs whereas (b) is shirt.

21.(d) All others are names of garments — shirt, coat, saree whereas (d) is scooter.

22.(c) As fasting causes hunger, similarly work results in fatigue.

23.(b) As clouds cause rain, similarly thunder causes lightning.

24.(c) As threat gives insecurity, similarly challenge ends in fighting.

25.(b) Taj Mahal is in Agra as Red Fort is in Delhi. In other choices, the location is mentioned first.

26.(c) 15

27.(d) 29

28.(a) 15

29.(a) 20

30.(b) M B M L J M B

31.(d) S F I U B F X

- 32.(d) 38. All others are prime numbers (divisible by itself).
- 33.(c) 86. All others are odd numbers (not divisible by two).
- 34.(b) 67. All others are even numbers (divisible by two).
- 35.(c) 32 All others are odd numbers.
- 36.(d) 86. Same as above.
- 37.(c) 49. All others are prime numbers.
- 38.(c) 9. Same as above.
- 39.(c) 78. All others are squares.
- 40.(b) 17. All others have 1 in the end.
- 41.(a) 11. All others are less than 10.
- 42.(d) 647. In all the other choices, the total of the digits in the number total up to 15.
- 43.(b) 853. All others total up to 18.
- 44.(b) Fan. All others are sources of light.
- 45.(c) Gandhi. All others are founders of religion.
- 46.(b) Liver. All others are organs, liver is a gland.
- 47.(d) Heart. All others are in pairs.
- 48.(c) Lung. All other organs help in digestion.
- 49.(c) Kidney. All others are glands of human body.
- 50.(b) Sledge. All others are wheeled vehicles.

TEST PAPER - 5

Directions: In each of the following questions, there are two words that have a certain relationship. Identify the relationship and mark your answers are as follows:

- (a) If one is the product of the other
- (b) If both are the product of some other thing
- (c) If one is the cause of the other
- (d) If one is the need of the other

1. Malaria, Mosquitoes

2. Cheese, Butter milk

3. Hunger, Fasting

4. Heat, Boiling

5. Doctor, Patient

6. Thread, Cotton

7. Hardwork, Success

8. Paper, Pulp

9. Negligence, Accident

10. Inefficiency, Failure

Directions: In each of the following questions, there are three words, that are related to one another in some way. These are followed by four alternative words under (a), (b), (c) and (d). Select from the alternatives the word that belongs to the same class as the three words given in the question.

11. Cloud, Ice, Vapour

- | | | | |
|---------|---------|-----------|--------------|
| (a) Sky | (b) Air | (c) Water | (d) Sunlight |
|---------|---------|-----------|--------------|

12. Instructor, Teacher, Professor

- | | | | |
|-------------|------------|-------------|-----------|
| (a) College | (b) School | (c) Scholar | (d) Guide |
|-------------|------------|-------------|-----------|

13. Man, Horse, Tiger

- | | | | |
|---------|-------------|-------------|---------|
| (a) Cow | (b) Buffalo | (c) Bullock | (d) Hen |
|---------|-------------|-------------|---------|

14. Hen, Cow, Buffalo

- | | | | |
|-----------|----------|-------------|---------|
| (a) Woman | (b) Lion | (c) Bullock | (d) Man |
|-----------|----------|-------------|---------|

- 15.** Turnip, Potato, Carrot
 (a) Peas (b) Spinach (c) Raddish (d) Brinjal
- 16.** Beaker, Jug, Bucket
 (a) Hat (b) Spoon (c) Tumbler (d) Knife
- 17.** Pondicherry, Lakshadweep, Delhi
 (a) Calcutta (b) Madras (c) Chandigarh (d) Bangalore
- 18.** Mizoram, Sikkim, Tripura
 (a) Delhi (b) Chandigarh (c) Punjab (d) Lakshadweep
- 19.** If BUTTER = 36 and TOAST = 25, then MILK will be ?
 (a) 17 (b) 15 (c) 16 (d) 8
- 20.** If SOAP = 16 TOWEL = 25, then BATHROOM will be ?
 (a) 64 (b) 32 (c) 16 (d) 18
- 21.** If TRUCK = 25 and DRIVER = 36, then LICENCE will be ?
 (a) 39 (b) 49 (c) 69 (d) 14

Directions: The letters in the following questions are given in a specific sequence/pattern. Select from answer choices the term that will continue the series and replace the question mark.

- 22.** GP, IQ, KR, MS, ??
 (a) LT (b) OU (c) PV (d) OT
- 23.** LH, MJ, NL, ON, ??
 (a) PP (b) PO (c) OP (d) OR
- 24.** RP, TR, VT, XV, ??
 (a) ZY (b) WW (c) ZX (d) YZ
- 25.** DG, FL, IP, MS, ??
 (a) OT (b) OS (c) RU (d) RY
- 26.** LF, NI, QK, SN, ??
 (a) TM (b) UO (c) TQ (d) VP
- 27.** OP, MR, KT, IV, ??
 (a) JW (b) GX (c) GY (d) HX

Directions: In the following questions, a statement has been given, which is followed by two conclusions, marked I and II.

Mark the answers as follows:

- (a) If only the first conclusion is true
- (b) If only the second conclusion is true
- (c) If both conclusions are true
- (d) If none of the conclusions is true

28. Statement. All stenographers are lazy. Some men are stenographers.

Conclusions

- I. All lazy people are men.
- II. Some men are lazy.

29. Statement. All scientists are hard working. No hard working men are poor.

Conclusions

- I. No scientist is poor.
- II. All poor men are not scientists.

30. Statement. All doctors are good. Some women are doctors.

Conclusions

- I. All good doctors are women.
- II. Some women are good.

31. Statement. All students in my class are hardworking. Sanjay is not hardworking.

Conclusions

- I. Sanjay is not a student of my class.
- II. Sanjay must work hard.

32. Statement. All lawyers are intelligent. Some women are lawyers.

Conclusions

- I. All intelligent people are women.
- II. Some women are intelligent.

33. Statement. All industrialists are hardworking. No hardworking man is religious.

Conclusions

- I. No industrialist is religious.
- II. All religious men are not industrialists.

34. Statement. All athletes are brave. All women are athletes.

Conclusions

- I. All women are brave.
- II. Some athletes are women.

Directions: In each of the following questions, one term (group of letters) is given, under which four terms marked (a), (b), (c) and (d) are given. Three of these alternative terms are identical and bear the same characteristics as the term given in the question and one is different. Select the one that is different.

35. R T V X

- (a) C E G I (b) E G I L (c) D F H J (d) P R T V

36. L O R U

- (a) B E H K (b) K N Q T (c) A D G K (d) I L O R

37. P R U Y

- (a) E G J N (b) B D G K (c) L N Q U (d) O Q T Y

38. L P S U

- (a) F J M O (b) C G J L (c) P T W Y (d) D H K N

39. F J M Q

- (a) C G J N (b) H L O S (c) F J P U (d) O S V Z

Directions: The numbers in each of the following questions follow a certain pattern and form a continuous series. Select from the alternatives given under each question an appropriate number to replace the question mark and continue the series.

40. 12, 13, 28, 87, 352, ??

- (a) 1765 (b) 679 (c) 1073 (d) 834

41. 15, 16, 34, 105, ???, 2120

- (a) 109 (b) 140 (c) 204 (d) 424

42. 13, 27, 56, 115, ???, 473

- (a) 181 (b) 192 (c) 234 (d) 214

43. 15, 29, 56, 109, ???, 423

- (a) 181 (b) 192 (c) 204 (d) 214

44. 3, 6, 9, 15, 24, 39, ??

- (a) 45 (b) 56 (c) 63 (d) 73

45. 6, 2, 8, 10, 18, 28, ??

- (a) 38 (b) 46 (c) 48 (d) 56

46. 3, 3, 6, 4, 12, 5, 24, ?

- (a) 28 (b) 7 (c) 6 (d) 32

Directions: In each of the following questions, a statement has been given, which is followed by four inferences marked (a), (b) (c) and (d). Find out the inference that definitely follows from the given statement.

47. Most students of this class are intelligent.

- (a) There is no student who is not intelligent.
- (b) There are some students who are less intelligent.
- (c) All students are intelligent.
- (d) Some of the students are intelligent.

48. Most shirts in that store are expensive.

- (a) There are no cheap shirts in that store.
- (b) Some shirts in that store are expensive.
- (c) There are cheap shirts also in that store.
- (d) Silk shirts in that store are cheap.

49. Some of the patients in the hospital are poor.

- (a) There are no rich patients in the hospital.
- (b) Most of the patients are not poor.
- (c) Some of the patients are rich.
- (d) Most of the patients are rich.

50. Doctors serve the suffering humanity.

- (a) Nurses do not serve the suffering humanity.
- (b) Some men who are doctors serve the suffering humanity.
- (c) Doctors who do not serve the suffering humanity are not doctors.
- (d) Most nurses serve the suffering humanity.

Answers and Explanations

- 1.(c) Mosquitoes cause malaria.
- 2.(b) Both cheese and butter milk are made from milk.
- 3.(c) Fasting causes hunger.
- 4.(c) Boiling is caused by heat.
- 5.(d) Doctor is needed by patient.
- 6.(a) Thread is a product of cotton.
- 7.(c) Success is the result of hard work.
- 8.(a) Paper is a product of pulp.

- 9.(c) Accident is the result of negligence.
- 10.(c) Inefficiency is the cause of failure.
- 11.(c) All the others are forms of water.
- 12.(d) All the others guide/teach students.
- 13.(c) All the others are males.
- 14.(a) All the others are females.
- 15.(c) All the other vegetables grow under the ground.
- 16.(c) All the others are containers to hold liquids.
- 17.(c) All the others are Union Territories.
- 18.(c) All the others are states.
- 19.(c) The number of letters in each word is multiplied by itself.
- 20.(a) 64. Same as above
- 21.(b) 49. Same as above.
- 22.(d) OT. There are two series. (i) G (H) I (J) K(L) M(N) O and (ii) P Q R S T (letters in brackets are skipped.)
- 23.(a) PP. There are two series (i) L M N O P and (ii) H(i) J(k)L (m) N(o) P.
- 24.(c) ZX. There are two series (i) R (S) T (U) V (W) X (Y) Z and (ii) P (Q) R (S) T (U) V (W) X.
- 25.(c) RU. There are two series (i) D (E) F (GH) I (JKL) M (NOPQ)R and G (H IJK) L (MNO) P (QR) S (T) U.
- 26.(d) VP. There are two series (i) L (M) N (OP) Q (R) S (TU) V and F (GH) I (J) K (LM) N (O) P.
- 27.(b) GX. Letters are taken in backward sequence and skipping pattern is (i) O(N) M (L) K (J) I (H) G and (ii) P (Q) R (S) T (U) V (W) X.
- 28.(b) 29. (a) 30.(b) 31.(a) 32.(b) 33.(a) 34.(a)
- 35.(b) In all others, one letter is skipped. It should have been EGIK.
- 36.(c) In all others, two letters are skipped. It should have been ADGI.
- 37.(d) In all others, the letters skipping pattern is 1 : 2 : 3, i.e. P (Q) R (ST) U (VWX)Y. It should have been OQTW.
- 38.(d) In others, the letter skipping pattern is 3 : 2 : 1. It should have been DHKM.
- 39.(c) F J P U In others, the letter skipping pattern is 3 : 2 : 3.
- 40.(a) 1765. Multiply by 1, 2, 3, 4, 5 and add 1, 2, 3, 4, 5.
- 41.(d) 424. Same as above.
- 42.(c) 234. Multiply by 2 and add 1, 2, 3, 4 and so on.

- 43.(d) 214. Multiply by 2 and reduce 1, 2, 3, 4 and so on.
- 44.(c) 63. Starting from first two numbers, the next number is obtained by adding the two previous numbers.
- 45.(b) 46. Same as above.
- 46.(c) 6. There are two letter series (i) 3, 6, 12 and 24, and (ii) 3, 4, 5, 6.
- 47.(b) 48.(c) 49. (c) 50. (b)

TEST PAPER - 6

Directions: Fill in the missing term, selecting from the answer choices given under each question

F, ?, L

- (a) I (b) N (c) L (d) J

9. AN, BO, CP

DQ, ER, FS

GT, HU, ??

- (a) MQ (b) LS (c) IV (d) NP

10. ER, FS, ??

HU, IV, JW

KX, LY, MZ

- (a) FH (b) JQ (c) GT (d) PL

Directions: Letters in following questions are in a specific pattern. Fill in the missing letters to complete the series

11. ba - ba - b a a b --

- (a) baba (b) aaaa (c) bbbb (d) baab

12. a b - a b a - b a a - a - ba

- (a) abab (b) baba (c) aaba (d) bbba

13. a b - ab b - a a b - b - a a

- (a) bbba (b) aabb (c) aaba (d) aaaa

14. a a - a b - a a b - a a - b b

- (a) bbba (b) aabb (c) baba (d) aaaa

15. a b b - a b - a a - b -

- (a) abba (b) bbbb (c) aaaa (d) abab

Directions: To answer Questions 16 to 20, study the description given below

"Ram starts from point 'P' and drives 20 km towards north up to point 'Q'. From here he turns to his left and drives another 15 km reaching point 'R'. From here he drives another 20 km after turning to his left and reaches point 'S'".

16. From point 'Q' driving to point 'R', in which direction he will be travelling?

- (a) North (b) South (c) East (d) West

17. After taking the second turn at point 'R' in which direction will he be driving ?

- (a) North (b) South (c) East (d) West

18. On reaching point 'S', how far will he be from his starting point 'P' ?

- (a) 45 km (b) 20 km (c) 35 km (d) 15 km

19. If he has to reach point 'P' from point 'S', he will have to turn towards ?

- (a) Right (b) Left (c) North (d) South

20. To reach point 'P' from point 'S', in which direction will he be driving?

- (a) North (b) South (c) East (d) West

Directions: Study the number sets in following questions and fill in the missing term maintaining the same relationship as it exists among other terms of the set.

21. 7,10,3; 5,11,6; 8,13,5; 3,5,2; 6,12,?

- (a) 5 (b) 3 (c) 4 (d) 6

22. 3,7,4; 5,8,3; 9,9,0; 4,?,3; 8,9,1

- (a) 6 (b) 5 (c) 7 (d) 9

23. 6,10,4; 5,9,4; 3,10,7; 6,13,7; ?,7,3

- (a) 3 (b) 4 (c) 5 (d) 9

24. 2,6,3; 4,16,4; 8,16,2; 12,36,3; 15,?,3

- (a) 45 (b) 55 (c) 36 (d) 39

25. 3,12,4; 5,20,4; 7,21,3; 4,20,5; 16,48,?

- (a) 5 (b) 4 (c) 8 (d) 3

26. 6,18,3; 12,60,5; 16,48,3; 15,60,4; 6,?,3

- (a) 15 (b) 16 (c) 18 (d) 21

27. 5,3,8; 16,4,20; 15,4,19; 12,?,16; 3,9,12

- (a) 3 (b) 2 (c) 5 (d) 4

Directions: Establish the relationship between the two terms to the left of the sign (::) and based on the same analogy, fill in the missing term towards the right of the sign.

28. DF : HJ :: PR : ??

- (a) NK (b) LY (c) PM (d) TV

29. BDG : PRU :: LNQ : ???

- (a) FGI (b) TRS (c) MKI (d) DFI

30. PRA : SUE :: DFI : ???

- (a) LMO (b) RTV (c) GIO (d) LJP

31. ABC : EGH : IJK : ???

- (a) TRB (b) LSO (c) PQO (d) OPQ

32. PAT : BEF :: LIP : ???

- (a) MOQ (b) GHI (c) STY (d) RST

33. BDGK : ACFJ :: ??? : DFIM

- (a) DKGH (b) FHKP (c) FGHI (d) FIHO

34. FHJL : LJHF :: BDFH : ???

- (a) HFDB (b) DBHF (c) FHBD (d) BDHF

35. AEP : EIR :: IOT : ???

- (a) OUV (b) OPQ (c) UVW (d) UWX

Directions: Column I below contains certain words and column II contains codes for these words given in Column I. However, the codes are not in proper sequence. Match Column I and Column II so that for words in Column I, their corresponding codes appear in Column II.

Column I

Column II

36. F E E L I N G S

- (a) n b s s j f e

37. M A R R I E D

- (b) x p n b o

38. B A C H E L O R S

- (c) f g g j d j b m t

39. W O M A N

- (d) d i j m e s f m

40. C H I L D R E N

- (e) c b d g j m p s t

41. O F F I C I A L S

- (f) g f f m j o h t

42. A set of cards is arranged and numbered from 1 to 35. If the card numbered 3 is drawn first and thereafter every fifth card is drawn, what will be the number of the last card drawn?

- (a) 31 (b) 33 (c) 32 (d) 30

43. From 1 O' clock in the morning till 12 noon, how many times will the pendulum of wall clock strike?

- (a) 70 (b) 75 (c) 78 (d) 12

Answers and Explanations

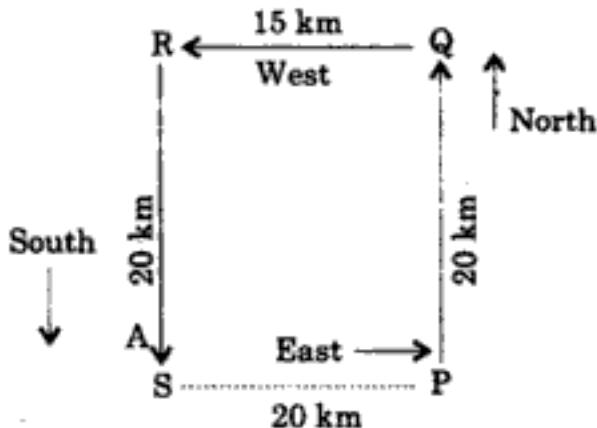
1. (b) The sum of first and third numbers is written as second number in each row.

2. (b) The same as above.
3. (d) The second number is deducted from the first number and the sum becomes the third number in each row.
4. (a) The figure is multiplied by the third figure and the sum becomes the second number.
5. (c) The total of each row, both vertically and horizontally is 18.
6. (d) The total of each row, both vertically and horizontally is 16.
7. (a) In each row, two following letters are skipped in between, viz: C(DE) F (GH) I; P(QR) S(TU)V; L(MN) O (PQ)R.
8. (d) First 3 letters are skipped and then 1 letter is skipped, viz: P (QRS) T (U)V; L (MNO) P (Q) R; F(GHI) J(K)L
9. (c)
10. (c) In question 9 and 10, the English alphabet is divided in two parts, first from A to M and second from N to Z. Then one letter from part one is taken and a corresponding letter from part two is taken:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

11. (b) The series is baa baa baa baa.
12. (c) The series is a b a a b a a b a a b a a b a.
13. (c) The series is a b a a b c a a a b b b a a a.
14. (b) The series is aaaabaaaabbaabb.
15. (a) The series is abbaabbaabba.

To solve questions 16 to 20, based on the information given in the beginning, a diagram is to be drawn as follows and answers will then be obvious.



16. (d) 17. (b) 18. (d) 19. (b) 20. (c)

- 21.(d) Each number set has three terms (numbers).
The first term and third term are added up and their sum becomes the middle term i.e. $7 + 3 = 10$.
- 22.(c) Same as above
- 23.(b) Same as above
- 24.(a) The first and last terms are multiplied and the result obtained becomes the middle term.
- 25.(d) Same as above
- 26.(c) Same as above
- 27.(d) The sum of first two terms becomes the third term, e.g. $5 + 3 = 8 = 5, 3, 8$.
- 28.(d) One letter in-between is skipped
- 29.(d) First one and then two letters are skipped, e.g. B(C) D (EF) G; P (Q) R(ST)U; L(M)N (OP)Q and D (E) F (GH)I.
- 30.(c) Each term consists of 2 consonants and one vowel. Between consonants, one letter is skipped.
- 31.(d) Each term has an initial vowel and consonant and vowels maintain the order : A E I O U.
- 32.(a) In each term, the first and the third letters are consonants in alphabetic order, skipping three intervening letters and the second term (middle) is vowel e.g.,
P (QRS)T = PAT; B (CDE) F = BEF and so on.
- 33.(b) Letters of each term are in alphabetic order and the skipping pattern is 1, 2 and 3, e.g.,
B (C) D (EF) G (HIJ) K and so on.
- 34.(a) First term is reversed to obtain the second.
- 35.(a) Each term has two vowels initially and a consonant in alphabetic order skipping one intervening letter.
- 36.(f) 37.(a) 38.(e) 39.(b) 40.(d) 41.(c)
- 42.(b)
- 43.(c) Total each time the pendulum strikes, i.e.
 $1+2+3+4+5+6+7+8+9+10+11+12 = 78$.

TEST PAPER - 7

Directions: Select from answer choices, marked a-d, an appropriate number to replace the question marks and continue the series

Directions: In each of the following questions a group of three letters are given and marked a-d Three of these groups are identical and follow a specific pattern and one is different from the rest. You have to identify the odd one and mark the same as your answer:

7. (a) P R T (b) B D F (c) H K M (d) R T V

8. (a) F H K (b) M O Q (c) L N Q (d) P R U

9. (a) P S U (b) G I K (c) F I K (d) M P R

10. (a) B E J (b) L P T (c) G K O (d) F J N

Directions: In each of the following questions, there are four terms marked a-d. One of these terms represent a class of which the remaining three terms are members. Identify the term which represents the class

- 11.** (a) Man (b) Goat
(c) Cow (d) Mammals

12. (a) Jeep (b) Vehicle
(c) Three-Wheeler (d) Car

- 13.** (a) Red (b) Green
 (c) Colour (d) Yellow
- 14.** (a) Shirt (b) Garments
 (c) T-shirt (d) Coat
- 15.** (a) Cow (b) Buffalo
 (c) Cattle (d) Calves

Directions: In a certain code, "NOTE BOOK" is coded as "REGO LEEN" and "SHIRT" as "XYZBG", how will you code the words given in following questions?

16. ROOTS

- (a) R L L F X (b) B E E Z X
 (c) B E E Y X (d) B E E G X

17. TORN

- (a) G E B R (b) G O B R
 (c) G Z B R (d) G E B N

18. HOTTER

- (a) Z E G G L N (b) Y E G G O B
 (c) Y E G G O Z (d) Y E G G O X

19. THOSE

- (a) G Y E X O (b) G Y B X O
 (c) G Y E Z O (d) G Y E X N

20. NEITHER

- (a) R Z O G Y N B (b) R Z O G Y X B
 (c) R Z O G Y O S (d) R Z O G Y O B

Directions: Select an appropriate letter from the alternatives marked a-d, to replace the question mark and continue the series

21. F, H, K, O, ?, Z

- (a) P (b) T (c) R (d) S

22. H, N, S, ?, Z

- (a) W (b) U (c) X (d) Y

23. G, J, L, O, ?, T, V

- (a) M (b) N (c) Q (d) P

24. Y, W, U, S, Q, ?

- (a) P (b) O (c) L (d) M

25. W, U, R, N, I, ?

- (a) C (b) G (c) E (d) D

Directions: In the following Postal Index Numbers (PIN codes), the first digit stands for state, second digit for district and last two digits represent main post offices and sub-post offices respectively. Study these numbers and answer questions that follow:

PIN CODES

142 021,	242 021,	310 024,	430 121,
560 021,	630 051,	142 021,	242 022,
310 025,	460 122,	560 031,	132 023,
242 023,	560 022,	460 123,	142 031,
242 033,	142 024,	460 124,	142 025.

26. How many states are represented in the above PIN codes?

- (a) three (b) four (c) five (d) six

27. Which state has minimum representation in the above PIN codes?

- (a) 2 (b) 4 (c) 6 (d) 5

28. Which two states have equal representation in the above PIN codes?

- (a) 1 and 2 (b) 2 and 3 (c) 2 and 4 (d) 4 and 5

29. How many districts are represented in the above PIN codes?

- (a) 5 (b) 4 (c) 8 (d) 10

30. Which PIN code is represented more than once in the above codes?

- (a) 142 021 (b) 242 021 (c) 142 031 (d) 460 123

31. How many main post offices are there in district represented by digit 2?

- (a) One (b) Two (c) Three (d) Four

32. How many sub-post offices are there in the district represented by digit 4?

- (a) One (b) Two (c) Three (d) Four

Directions: In each of the following questions, there is a question mark. Which one of the five alternatives given under the question satisfies the same relationship as is found between the two terms to the left of the sign '::' given in the question.

33. FOOT : MAN :: HOOF : ?

- (a) Leg (b) Dog (c) Horse (d) Shoe

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TEST PAPER - 8

INTELLIGENCE TEST PAPER

Directions: In Questions 1 to 4 there are three rows of numbers each with one number missing from one of the rows. Numbers in each row are filled according to a certain rule. Find out the rule involved and the number which will fill the empty space.

Directions: In Questions 5 to 10, there is a relationship between the two terms to the left of the sign ‘::’ (is as); the same relationship exists between the two terms to the right of this symbol. One of the terms is missing in each question. Choose from the options the term which can replace the question mark.

5. F D E : I G H :: (?) : O N M
 (a) P Q R (b) C A B (c) F G H (d) R S T

6. N M O : Q P R :: E D F : (?)
 (a) G H I (b) M N O (c) H G I (d) H I J

7. (?) : R S Q B :: G M I H : H I M G
 (a) R S Y T (b) B O S R (c) D F M A (d) D F M O

8. R M O K : O M K R :: (?) : J N Y S
 (a) R S Y T (b) N S Y J (c) S Y N J (d) S N J Y
9. S I E K : L A O G :: P U E N : (?)
 (a) G V F O (b) S C E D (c) Y E S I (d) F I E O
10. D A L D A : E B M E B :: K A L K A : (?)
 (a) A K L A K (b) H B N H B
 (c) T B S M B (d) L B M L B

Directions: In questions 11 to 16 four letters/numbers/words are given marked (a) to (d). One of them is different from the other terms. Select the odd term.

11. (a) D F I (b) F H K (c) I K N (d) K M O
12. (a) A I D (b) I O B (c) B I C (d) O U C
13. (a) 5 4 9 (b) 3 4 7 (c) 3 1 6 (d) 5 4 9
14. (a) 5 1 4 (b) 3 6 9 (c) 3 6 8 (d) 2 8 4
15. (a) B A T A L A (b) K H A P L A
 (c) K A M I N A (d) L A D A L A
16. (a) B R E A D (b) B I S C U I T S
 (c) N O O D L E S (d) C H E E S E

Directions: In questions 17 to 20, one of the terms is missing in each series. Choose the correct alternative from answer choices to complete the series.

17. 3, 6, 11, (?), 27, 38, 51
 (a) 13 (b) 18 (c) 20 (d) 27
18. 12, 15, 21, 24, 30, 33, (?), 51
 (a) 43 (b) 38 (c) 45 (d) 39
19. 32, 37, 47, 58, 71, (?)
 (a) 77 (b) 79 (c) 75 (d) 82
20. 13, 17, 25, (?), 37, 47
 (a) 34 (b) 35 (c) 36 (d) 32

Directions: In the following questions letter series are given in which letters are in a definite sequence. Find out the sequence (order/pattern) involved and select from answer choices given under each series, marked a-d, an appropriate letter/letters to continue the series.

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Directions: Letters in following series are in a particular order. Select appropriate letters from answer choices, given under each series, to complete the series as maintaining a specific pattern:

31. - - a b b - a b b a - - b a

- (a) b b a a b
(c) b a a a b

- (b) a b b b a
(d) b a b a b

32. - b - a - b a - b - a b a b - a

- (a) a b a b a b
(c) b b a a b b

- (b) b a a b b a
(d) b a b a b a

33. b - b a - - b b - - a a - b b a

- (a) a b a b a b
(c) b a a b a b

- (b) b a b a b a
(d) a b b a b a

34. - a - b b - b a - b b - - a a b

- (a) a b b a b a
(c) b b a b b a

- (b) a a b b b b
(d) b a a a a b

35. - b - a - b b - - a b - b b a a

- (a) a b a a b a
(c) b a b b a b

- (b) a b a b a b
(d) b b a a b b

Directions: If C = D, P = Q, U = V and Y = Z, select codes for words given in questions 36 to 40 from answer choices given under each word to be coded:

36. H O P E

- (a) I P O E
(c) I P Q D

- (b) G P C D
(d) I P Q F

37. B E C A M E

- (a) C E D B N E
(c) C F D B N F

- (b) C P D B N F
(d) C P D B N B

38. A B O R T

- (a) Z A R E T
(c) B C P S U

- (b) B C P T U
(d) B C P S W

39. Q U A R T

- (a) R V D S V
(c) R V B T U

- (b) R V B S U
(d) R U B S V

40. D I B S U

- (a) E J C T V
 (c) H E A R D

- (b) E C J U T
 (d) C E A R T

Answers and Explanations

- 1.(c) The sum of each row downward is same, i.e. 40.
- 2.(b) The sum of numbers in the horizontal and vertical direction is the same, i.e. 89
- 3.(b) In each row, total of first and third numbers becomes the medial number.
- 4.(d) In each row, the sum of numbers given in the middle and end becomes the first number.
- 5.(b) The second, third and first letter in each term are in succession in the alphabet.
- 6.(c) The second, first and third letter in each term are in succession in the alphabet.
- 7.(b) The letters of the first term are reversed in the second term.
- 8.(d) In second and third letters are reversed and take place of first and second letter and the first and fourth letters are reversed and become third and fourth letters.
- 9.(d) Each term is made of two consonants and two vowels between them.
- 10.(d) The second term is formed by taking the next letter in alphabetic sequence: DALDA = (D) E (A) B (L) M (D) E (A) B.
- 11.(d) Each set of letters (term) has one and two following letters omitted in between: Letters in brackets are the one skipped.
 F (G) H (IJ)K; I (J) K (LM) N;
 where as in (d) only one letter is skipped
 i.e. K(L) M (N) O
- 12.(c) All terms have two vowels in the beginning in alphabetical sequence and one consonant, except in(c) which has only one vowel but two consonants.
- 13.(c) In each number set, sum of first and second number becomes the third number, i.e.
 $5 + 4 = 9 : 549$
 $3 + 4 = 7 : 347$
 $5 + 4 = 9 : 5\ 4\ 9$

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Directions: In each of the following questions, there are four sets of numbers marked a-d. While 3 of them are alike in some way or the other, one is different from the rest (odd). Select the odd one out

13. (a) 39540 (b) 59403 (c) 30945 (d) 45063

14. (a) 36457 (b) 67354 (c) 47635 (d) 67432

15. (a) 9254 (b) 5672 (c) 5384 (d) 5768

16. (a) 3548 (b) 5876 (c) 6941 (d) 5852

Select the odd one out

17. (a) boy (b) girl (c) man (d) person

18. (a) rice (b) wheat (c) maize (d) peas

19. (a) metre (b) quintal (c) inch (d) mile

20. (a) nose (b) eye (c) tooth (d) tongue

21. (a) Bombay (b) Madras (c) Cochin (d) New Delhi

Directions: Fill in the missing letter.

22. C, G, J, L

G, K, N, P

K, O, (?), T

(a) P (b) Q (c) R (d) U

23. F, H, K, O

P, R, U, Y

O, (?), T, X

(a) P (b) Q (c) R (d) S

24. K, N, P, S

F, I, K, (?)

Q, T, V, Y

(a) L (b) M (c) N (d) O

25. F, H, K, M

O, Q, T, V

R, T, W, (?)

(a) V

(b) C

(c) Y

(d) Z

26. Q, U, X, Z

G, K, N, P

H, (?), O, Q

(a) I

(b) J

(c) K

(d) L

Directions: The two words on the left have a certain relationship. To obtain the same relationship, replace the question mark on the right hand side and fill in the appropriate word from the answer choices

27. WORK : UNEMPLOYMENT :: MONEY : ?

(a) Corruption (b) Economy (c) Poverty (d) Richness

28. JEWELLERY : ORNAMENTS :: ? : CLAY

(a) Utensils (b) Bricks (c) Pottery (d) Beauty

29. WASH : CLEANLINESS :: SLEEP : ?

(a) Fatigue (b) Bed (c) Rest (d) Night

30. LIGHT : DARKNESS :: ? : HUNGER

(a) Weakness (b) Sickness (c) Water (d) Food

Directions: In Questions No. 31 to 36, there are two columns. In column I, there are certain words which have been coded in column II. However, the codes given in column II are not exactly in the same order as the given words. Your task is to match column I with column II so that the codes are in their respective places

*Column I**Column II***31.** NATIONAL

(a) q s p x z b j

32. TELEPHONE

(b) o c u z p o c m

33. COMPETITION

(c) y z m m c r f

34. SUCCESS

(d) u f m f q i p o f

35. VILLAGE

(e) k p x q f u f u z p o

36. PROMISE

(f) b v k k f b b

Directions: Fill in the blanks.

37. A room must have ----.

- (a) doors (b) windows (c) shelves (d) roof

38. A tree must have ----.

- (a) leaves (b) flowers (c) roots (d) fruits

39. A hospital must have ----.

- | | |
|------------------|--------------------|
| (a) laboratories | (b) X-Ray machines |
| (c) doctors | (d) fans |

40. A school must have ----.

- (a) libraries (b) playgrounds (c) teachers (d) laboratories

Answers and Explanations

- 1.(d) C - Taking from backwards after W, skip one letter, then 2 letters, then 3 letters and so on.
 W (V) U (ST) R (QPO) N (MLKJ) I (HGFED) C
 Letters in brackets are one skipped.
- 2.(b)V - Starting forward from H, skip one letter, then two letters, then 3 letters and so on. After Z, restart from A. Hence
 H (I) J (KL) M (NOP) Q (RSTU) V (WXYZA) B
- 3.(a) R - Starting from F, skip 1 letter, then 2 letters and again start from 1 letter, then 2 letters; repeat the process:
 F (G) H (IJ) K (L) M (NO) P (Q) R
- 4.(b) W - There is 3 letters difference between each letter;
 G (HIJ) K (LMN) O (PQR) S (TUV) W (XYZ) A
- 5.(d) S - Starting from B, skip 2 letters and then 3 letters alternatively:
 B (CD) E (FGH) I (JK) L (MNO) P (QR) S (TUV) W
- 6.(d) X - First 4 and 2 letters skipped alternatively:
 C (DEFG) H (IJ) K (LMNO) P (QR) S (TUVW) X
- 7.(d) 37 - Starting from 1, next number is obtained by adding the previous two numbers.
- 8.(c) 58 - Same as above.
- 9.(b) 30 - Addition increased successively by one each time:
 +2, +3, +4, +5, +6 and +7
- 10.(c) 2160 - Multiplier increases by one successively:
 $3 \times 1, 3 \times 2, 6 \times 3, 18 \times 4, 72 \times 5, 360 \times 6$

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Directions: In questions 13 to 18 each, five sets of letters marked a-e are given. Four of the letter sets are based on similar pattern or are alike and one of them is different or odd. Find the odd man out:

- | | | |
|---------------|-----------|-----------|
| 13. (a) P R U | (b) I K N | (c) B D G |
| (d) D F I | (e) G I K | |
| 14. (a) T V Y | (b) L N Q | (c) F H K |
| (d) P R O | (e) H J M | |
| 15. (a) D H K | (b) P T W | (c) F J M |
| (d) O S V | (e) R T V | |
| 16. (a) F K R | (b) F I L | (c) H K N |
| (d) M P S | (d) O R U | |
| 17. (a) D G I | (b) F P S | (c) F I K |
| (d) H K M | (e) J M O | |
| 18. (a) F I M | (b) H K O | (c) G B R |
| (d) I L P | (e) B E I | |

Directions: In Questions 19 to 24, one term is given in Column I and four terms are given in Column II marked a-d. Select from column II the term which has same characteristics as that of column I:

<i>Column I</i>	<i>Column II</i>			
	(a)	(b)	(c)	(d)
19. F H K	H I L	M O R	B F H	P N T
20. H K M	O P M	B R T	O R T	M O D
21. H J M	L P Q	Y Z A	B E H	P R U
22. F J N	H L P	P N T	Y O L	K M Y
23. P U Z	A T U	G L Q	P Q B	M N T
24. G I K	Q S Y	W Y Z	P R T	U T S

Directions: For questions 25 to 30 — Column I contains certain words. Column II contains their codes which are not in the same order as the words in Column I. Match both columns to provide appropriate codes for words in column I:

<i>Column I</i>	<i>Column II</i>
25. P R E S S	(a) c d d p z o s b y i

26. W H I C H (b) t w y p n
27. P R O V I D E (c) w y p b t q s f
28. A C C O U N T A N T (d) b n t i d e v
29. E N G I N E E R (e) b o u p p
30. H O S P I T A L (f) p h m n y p p x

Directions: In a certain code "WE WOULD BE GLAD" is coded as "xf xpvmcf hmbe". Based on this coding scheme, provide codes for words given in Questions 31 to 35 below:

Directions: In each of the following questions, five words, marked a-e, are given. Four of them are alike in a certain manner and form a group. Which is the one that does not belong to the group?

- 39.** (a) The Sunday (b) The Blitz (c) Novels
 (d) The Tribune (e) Reading material
- 40.** (a) Pen (b) Pencil (c) Ball point pen
 (d) Felt pen (e) Writing material
- 41.** (a) Cutfit (b) Coat (c) Bow
 (d) Shirt (e) Trousers
- 42.** (a) Aspro (b) Analgin (c) Pain-killers
 (d) Novalgin (e) A.P.C.
- 43.** (a) tricycle (b) Auto-rickshaw (c) Cycle-rickshaw
 (d) Tempo (e) Three-wheelers
- 44.** (a) Vehicles (b) Toyota (c) Fiat
 (d) Ambassador (e) Maruti
- 45.** (a) Chairs (b) Furniture (c) Tables
 (d) Sofa-set (e) Stools
- 46.** (a) Coca-Cola (b) Campa-Cola (c) Soft drinks
 (d) Limca (e) Pespi-Cola

Answers and Explanations (Intelligence Tests)

- 1.(d) The third term is obtained by adding the first and second term together and then each next term is obtained by adding the previous two terms.
- 2.(b) Same as above.
- 3.(a) Difference increases by one each time;
 $6 (+1) 7 (+2) 9 (+3) 12 (+4) 16 (+5) 21.$
- 4.(b) Differences reduce by one each time;
 $6 (+5) 11 (+4) 15 (+3) 18 (+2) 20 (+1) 21.$
- 5.(c) Each time four is added $5(+4) 9 (+4) 13 (+4) 17 (+4) 21 (+4) 25.$
- 6.(b) First term is multiplied by two to obtain the second term and thereafter the multiplier increases by one each time;
 $3 (\times 2) 6 (\times 3) 18 (\times 4) 72 (\times 5) 360 (\times 6) 2160.$
- 7.(a) Each term contains one letter from beginning of the alphabet starting from letter 'B' and the second letter from backward sequence starting from letter 'Y'.

- 8.(a) Each term contains one letter from the end of the alphabet starting from 'U' and the second letter from the end of alphabet (backward) starting from letter 'F'.
- 9.(d) Starting from second term, difference between the letters increases by one and the difference in figures increases accordingly, viz; C (D) E, E (FG) H, H (IJK) L, L (MNOP) Q and in case of numbers, 3 (+1) 4 (+2) 6 (+3) 9 (+4) 13.
- 10.(b) Letters are skipped in the ratio of 1 : 2 : 1 : 2 and so on;
C (D) E (FG) H (I) J (KL) M (N) O (PQ) R.
- 11.(d) Letters are skipped in the ratio of 1 : 2 : 3 1 : 2 : 3 1 : 2 : 3 viz
C (D) E (FG) H (IJK) L (M) N (OP) Q (RST) U.
- 12.(a) Same as in Question 10 above.
B (C) D (EF) G (H) I (JK) L (M) N (OP) Q
- 13.(e) Other terms follow a skipping pattern of 1 : 2, e.g. P (Q) R (ST) U.
- 14.(d) Same as in question 13 above.
- 15.(e) Other terms follow a skipping pattern of 3 : 2, e.g. D (EFG) H (IJ) K
- 16.(a) Other terms follow a skipping pattern of 2 : 2, e.g. F (GH) I (JK) L
- 17.(b) Other terms follow a skipping pattern of 2 : 1, e.g. D (EF) G (H) I.
- 18.(c) All other terms follow a skipping pattern of 2 : 3, e.g. F (GH) I (JKL) M.
- 19.(b) The skipping pattern is 1 : 2 F (G) H (IJ) K and M (N) O (PQ) R.
- 20.(c) The skipping pattern is 2 : 1 H (IJ) K (L) M and O (PQ) R (S) T.
- 21.(d) The skipping pattern is 1 : 2 H (I) J (KL) M and P (Q) R (ST) U
- 22.(a) The skipping pattern is 3 : 3 F (GHI) J (LKM) N and H (IJK) L (MNO) P
- 23.(b) The skipping pattern is 4 : 4 (QRST) U (VWXYZ) Z and G (HIJK) L (MNOP) Q
- 24.(c) The skipping pattern is 1 : 1 G (H) I (J) K and P (Q) R (S) T

Explanation for Questions 25-30: By counting the number of letters in the word given in column I and the number of letters in the code given in column II, appropriate codes can be selected. In case of more than one word having same number of letters, the repetition of letters in the word helps to identify the code.

- 25.(e) The word has 5 letters and a repetition of the letter S. The corresponding code is (e) because it contains 5 letters and repetition of the letter 'p'.
- 26.(b) The word contains 5 letters as in question 25. However, there is no repetition of letters. Therefore, the corresponding code should

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Section 6 Logical Reasoning

INTRODUCTION

The word 'Logic' is derived from the Greek word 'Logos' which means 'Thoughts in Language'. We can say that 'Logic' is the 'Science of thought' expressed in language.

The mental recognition of cause-and-effect relationship is called 'reasoning'. It may be prediction of an event from an observed cause or the inference of a cause from an observed event.

Logical reasoning is a process of passing from the known to the unknown. It is the process of deriving a logical inference from a hypothesis through reasoning.

This type of reasoning involves three important attributes, viz, What? Why? and How?

Another important factor in logical reasoning is logical deduction. Deriving an inference from units of arguments which are called proposition in logic or deducing an inference from statements is called logical deduction. For example:

- (a) Man is mortal
- (b) Raveesh is a man.

Therefore, Raveesh is mortal

From statement (a) and (b) we derive a logical conclusion that Raveesh is mortal.

Basic Concepts in Logic

Term means the *subject* or *medicate* of a logical proposition. A *proposition* is the statement of a certain relation between two terms. All propositions either assert or deny something. The subject is that about which an assertion is made and whatever is asserted is called the predicate. The sign of relation between subject and predicate is called *copula*.

For example, "Man is mortal" is a proposition, the term 'Man' is a subject and 'Mortal' is a predicate and both terms are joined by the copula "is".

Propositions may be classified as follows:

- (a) *Universal*: What is asserted applies to the whole of a subject. Usually, 'AU' is prefixed to such propositions. "All religious man are good" is a *Universal preposition*.

- (b) *Particular*: Only part of the subject is covered. Usually, "some" is prefixed in such propositions. "Some steaks are tough" is a particular proposition.

Universal and particular propositions are based on *quantity*. They are further classified on the basis of *quality*, viz *affirmative* (e.g. Raveesh is an Indian) and *negatives* (Raveesh is not Indian).

Based on quality and quantity, propositions are further classified into:

- Universal affirmative*: "All teetotalers are short lived" affirms something of the whole subject. This is represented by "A".
- Universal negative*: "No politician is rancorous". Something is denied of the whole subject. This is represented by "E".
- Particular affirmative*: "Some professors are hard-working". Something is affirmed of a part of the subject. This is represented by "I".
- Particular negative*: Something is denied of a part of the subject. "Some writers are professionals". This is represented by "O".

Symbols A, E, I and O, above are adopted from first two vowels of "Affirmo" and "Nego". A and I are therefore affirmative and E and O are negative.

Distribution of Terms

- A term is distributed when reference is made to all. A term is undistributed when reference is made to an indefinite part of the whole.
- In universal propositions, the subject term is always distributed while in a particular proposition, the subject is undistributed.
- The predicate in 'A' proposition is undistributed and the same is true for 'I' proposition. Hence affirmative propositions do not distribute their predicate.

In 'E' proposition the predicate is distributed and this also applies to 'O' proposition.

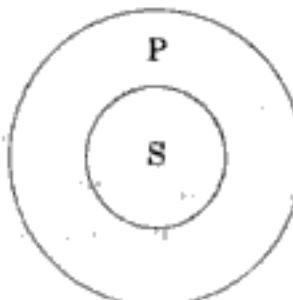
The universal proposition distributes the subject, while the particular proposition does not distribute the subject. On the other hand, the predicate is distributed in negative proposition but undistributed in affirmative ones. This can be diagrammatically described as follows:

'A' Proposition

"All Indians are religious-minded"

P - religious minded

S - Indians



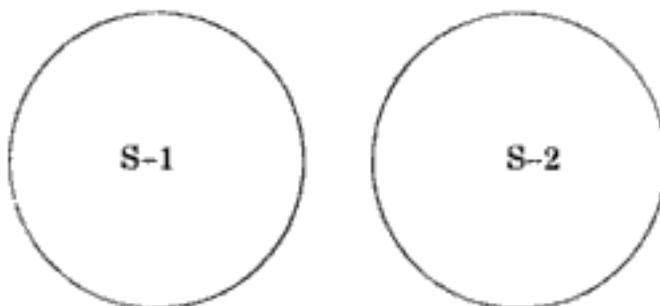
'E' Proposition

"No birds are mammals"

The classes are mutually exclusive

S-1 : Birds

S-2 : Mammals

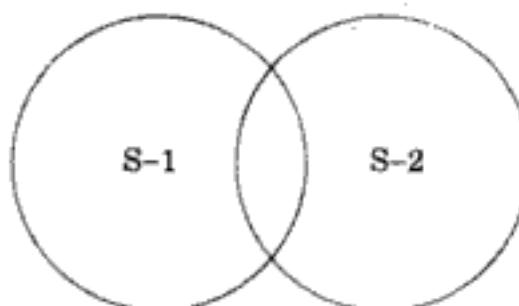


'I' Proposition

"Some birds are web-footed"

Two classes are partially included in one another S-1 : Birds

S-2 : Webfooted

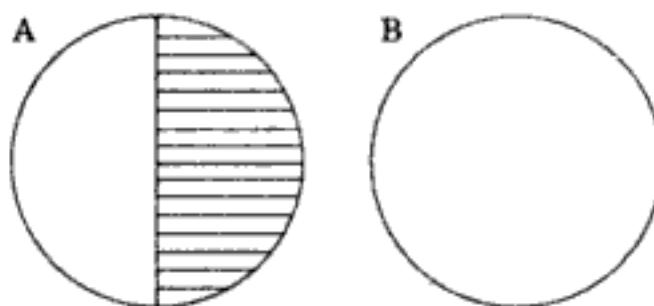


'O' Proposition

"Some birds are not able to fly"

A - Some birds (Shaded area pin points some)

B - Birds that fly



The shaded part of circle (A) represents 'Some birds'. The circle (B) refers to all those who are not able to fly. The subject "some" is undistributable but the circle represents substances that are unable to fly; it means it comes all. So in 'O' proposition, the predicate is distributed but not the subject.

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- (2) No man is perfect (E)
 Therefore, all men are non-perfect (A) — valid
- (3) Some businessman are rich. (I)
 Therefore, some businessmen are not rich (O) — valid
- (4) Some men are not good. (O)
 Therefore, some men are not good. (I) — valid.

Contraposition

Here a double change takes place. First the change is to obverse and then to converse. For example,

- (i) All men are mortal. (A)
 (ii) No non-mortal is a man. (E)

Therefore, no man is non-mortal (E)

Inversion

There are two types of inversions.

Partial in which the subject is contradictory of the original and the predicate same as the original. The inverse of "All physicists are mathematicians" is either "Some non-physicists are non-mathematicians" or "Some non-mathematicians are non-physicists". The former is partial and the latter is full inversion.

Only universal proposition A and E can be inverted. The inverse of A and E is always a particular proposition I or O.

Here are some examples of immediate Inferences

- (1) **Statement** : Industrial workers are hard-working.
Conclusion : Some hard-working persons are industrial workers.
 Conclusion is true because converse of A is I.
- (2) **Statement** : Lady doctors are not less paid than the male doctors.
Conclusion : Some male doctors are less paid than lady doctors.
 Conclusion is True because converse of E is E, hence valid
- (3) **Statement** : No man is perfect.
Conclusion : Some imperfect persons are man.
 Conclusion is True, contraposition of E, first obvert then convert.
- (4) **Statement** : All men are mortal.
Conclusion : No man is non-mortal.
 Valid because obverse of A is E.
- (5) **Statement** : Some men are wise.
Conclusion : Some men are not unwise.
 Conclusion is valid as obversion of I is O.

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5. Statements

All books are magazines.

Some magazines are novels.

Conclusion

1 Some books are novels.

2 Some novels are magazines.

Answer: B; A + I leads to no conclusion, thus from both these two statements, no conclusions follow, but if we consider only statement 2, we will find that this is the same proposition as conclusion 2. Thus only 2 follows.

Practice Questions**1. Statements**

Some books are magazines.

Some magazines are novels.

Conclusion

1 Some books are novels.

2 Some novels are books.

2. Statements

All beautiful girls are foolish.

No foolish girls are smart.

Conclusion

1 No girl is smart.

2 No beautiful persons are smart.

3. Statements

Some cows are deer.

Some deer are fish.

Conclusion

1. Some cows are fish.

2 Some fish are cows.

4. Statements

Some shirts are socks.

No sock is red.

Conclusion

1 Some socks are skirts.

2 No shirt is red.

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4. (a) I + E = O; which leads to the conclusion "Some shirts are not red". But if we consider only statement (1), then we will find that it is just another form of conclusion (1). Thus we can say that only (1) follows
5. (d) A + I = No conclusion.
6. (d)
7. (c)
8. (b)
9. (b)
10. (e)
11. (d)
12. (d)
13. (d)
14. (d)
15. (d)

Type 3: Mediate Inference (Syllogism)

Here two premises are given on the basis of which the inference has to be drawn.

For example:

(1) All men are mortal.

All teachers are men.

Therefore, all teachers are mortals.

(2) All men are good.

Raveesh is a man.

Therefore, Raveesh is good.

Syllogism may be further classified as follows:

a) Categorical: The given preposition or the premise are categorical. The conclusion is also categorical. For example:

All men are strong.

He is a man.

Therefore, he is strong.

b) Hypothetical - Categorical: The major premise is hypothetical (conditional assertion) and minor premise is categorical. Inference or conclusion remains categorical. For example:

If you come in time, you will meet him.

You came in time.

Therefore, you met him.

c) Disjunctive-Categorical: The major premise is disjunctive (conditional proposition) and the minor premise is categorical. Inference also remains categorical. For example:

Either he is intelligent or you are teaching him.

He is intelligent.

You are teaching him.

d) Dilemma: The major premise is a compound hypothetical, the minor premise is disjunctive and the conclusion is either categorical or disjunctive. For example:

(1) if A is B

C is D,

and E is F

C is D

(2) Either A is B or E is F

(3) C is D

e) Fallacies (Syllogistic): In a logical reasoning questions, validity of the conclusion is to be determined. Fallacies are misleading arguments (sophism) and their validity, depends upon certain rules and their violation amounts to committing fallacy. There are various kinds of fallacies.

- *Undistributed middle:* Study the following example:

All fruits are good for health.

Iron tonic is good for health.

Therefore, iron tonic is a fruit.

The middle term “good for health” is undistributed and, therefore, the conclusion is fallacious.

- *Illicit process:* When the term undistributed in its own premise is distributed in the conclusion, an illicit fallacy occurs.

Some intelligent persons are liars

Raveesh is a liar.

Therefore, Raveesh is intelligent.

- *Fallacy of two middle terms:* Study the following examples.

Nothing is better than wisdom.

A loaf of bread is better than nothing.

Therefore, a loaf of bread is better than wisdom.

In this example, there are four terms

“nothing”, “better than nothing”, “wisdom” and “a loaf of bread”.

- *Fallacy of diction:* Here the use of ambiguous word in statements amounts to a fallacy. For example:

Apples are good.

Good is the aim of man's life.

Therefore, the aim of man's life are apples.

● *Use of ambiguous phrases:* also lead to fallacies, or when the construction of the sentence is misleading. These fallacies are called, 'fallacy of amphibiology'.

For example, Gavaskar, Kapil will lead.

In this, it is not clear as to who will lead—whether Gavaskar or Kapil.

● *Fallacies of composition and division:* An argument becomes erroneous in composition when what is true of certain things, each taken separately, is assumed to be true of them collectively in the conclusion. For example,

Three and two are odd and even.

Three and two are five.

Therefore, five is odd and even.

An argument becomes erroneous in *division* when what is true of certain things collectively is taken to be true of them separately in the conclusion. For example,

Red Indians are disappearing.

He is a Red Indian.

Hence, he is disappearing.

In addition, there are fallacies relating to wrong accent, false causes and arguing beside the point which can be easily made out from the given statement.

Illustrations

Directions: In each of the following questions, two statements are given followed by two conclusions numbered 1 and 2. You are to take the two statements to be true even if they seem to be at variance from commonly known facts and then decide which one of the conclusions logically follows from the two statements. Your answer will be:

- (A) if only conclusion 1 follows
- (B) if only conclusion 2 follows
- (C) if either 1 or 2 follows
- (D) if neither 1 or 2 follows
- (E) if both 1 and 2 follows

1. Statement

Smoking is dangerous. Rash driving is dangerous.

Conclusions

- 1 Rash driving is smoking.
- 2 Smoking is rash driving.

Answer: D

2. Statement

Some cooks are young. All boys are young.

Conclusions

- 1 Some boys are cooks.
- 2 Some cooks are boys.

Answer: D**3. Statement**

Stories are interesting. All interesting incidents are rumors.

Conclusions

- 1 Stories are rumors.
- 2 Rumors are stories.

Answer: A**4. Statement**

All girls are beautiful. Vandana is a girl.

Conclusions

- 1 Vandana is beautiful.
- 2 Vandana is not beautiful.

Answer: A**5. Statement**

Some dogs bite. All dogs bark.

Conclusion

- 1 Dogs which bite also bark.
- 2 Dogs which bark do not necessarily bite.

Answer: A**6. Statement**

Doctors serve their country.

Engineers are not doctors.

Conclusions

- 1 Engineers do not serve their country.
- 2 Some engineers serve their country.

Answer: A**7. Statement**

All travellers are men. All men are graduates.

Conclusions

- 1 All men are travellers.
- 2 All travellers are graduates.

Answer: B**8. Statement**

Dogs have four legs. Tables have four legs.

Conclusions

- 1 Tables are dogs.
- 2 Dogs are tables.

Answer: D

9. Statement

Rats are Bats. Bats are Mats

Conclusions

- 1 Mats are Rats.
- 2 Rats are Mats.

Answer: D

10. Statement

Some men are wolves. All wolves are hungry.

Conclusions

- 1 Men are hungry wolves.
- 2 All those who are hungry are wolves.

Answer: D

11. Statement

Rats are bats, rats eat mats.

Conclusions

- 1 Bats eat mats.
- 2 Mats eat bats.

Answer: D

12. Statement

Love is God

Faith is God

Conclusions

- 1 Love is Faith.
- 2 Faith is Love.

Answer: D

13. Statement

All radios are transistors. Some transistors are imported.

Conclusions

- 1 All radios are imported.
- 2 All transistors are not radios.

Answer: B

Practice Questions

1. Statement

Whales are fish. Fish are in the sea.

Conclusions

- 1 Whales are in the sea.
- 2 Whales are sea.

2. Statement

The committee rewarded him. Kuldeep Jain is the member of a committee.

Conclusions

- 1 Kuldeep Jain rewarded him.
- 2 Kuldeep Jain did not reward him.

3. Statement

Industrial cities are highly polluted.

Pollution means more diseases.

Conclusions

- 1 People who live in industrial cities become immune to diseases.
- 2 People living in cities which are not industrial are healthier than those who live in industrial cities.

4. Statement

Space has no gravitational pull.

It has no atmosphere.

Conclusions

- 1 Gravity is due to atmospheric pressure.
- 2 Its not difficult to breathe in space.

5. Statement

People live in wooden houses in Simla.

Earthquakes are frequent in Simla.

Conclusions

- 1 Wooden houses are tremor proof.
- 2 Wooden houses are stronger than brick house.

6. Statement

Computer literates have good reasoning ability.

Seema can understand the puzzle quickly.

Conclusions

- 1 Seema is computer literate.
- 2 Seema has good reasoning ability.

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13. Statement

Sheetal is a friend of Mukta.

Mukta is a friend of Vandana.

Conclusions

1 Sheetal, Mukta and Vandana are friends.

2 Sheetal is friend of Vandana.

Answer:

- | | | | | | | |
|------|------|-------|-------|-------|-------|------|
| 1. D | 2. D | 3. B | 4. D | 5. B | 6. E | 7. D |
| 8. D | 9. B | 10. A | 11. C | 12. D | 13. D | |

TYPE 4: ASSUMPTION/CONCLUSION OR STATEMENT/ARGUMENT TYPE QUESTIONS

(A) Commonsense Reasoning Vs Logical Reasoning

In common sense reasoning, no doubt logical rules and our personal judgements are helpful but one cannot arrive at a 100% correct answer. In the reasoning questions, if we use commonsense and judgement only (instead of logical reasoning tools), we may come across wrong answers which seem to be true sensewise but are not actually.

In such questions the answer choice is more than two, i.e. (a) True (b) Probably true and (c) Probably false or Irrelevant. Here first you have to ascertain whether the conclusion is wholly true or totally false. If the probability is nearly 100% or even if it is more than 50%, the argument is probably true, for the simple reason that it is nearer to 100% than to zero. If it is less than 50%, then it is probably false because in that case it is nearer to zero.

If it is zero, then it is absolutely false and if it is 100% true, it is absolutely true. For instance,

Statement: All students of this class secured 1st division. Shrenik is a student of this class.

Conclusion: Shrenik secured first division.

(Conclusion is TRUE: "All" includes Shrenik and thus is 100% TRUE.)

However, in logical reasoning you have to base the validity or falsity of the conclusion on the given premises. You are not concerned with the truth or falsity of the given premises. You have to presume they are correct, which in fact they may not be. For example,

Statements: Some men are cars.

Manoj is a man.

Conclusion (I): Some cars are men.

Conclusion (II): Some men are not cars.

From the above statements, we conclude that some men are cars because some cars are men and some men may not be cars. Actually, no man can be a car and

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7. Kuldeep is as tall as Rohit.
 Rohit is as tall as Lokesh.
 Therefore, Kuldeep is as tall as Lokesh.
 (Valid—possess reflexivity, symmetrical and transitivity).

Illustrations

Directions: In each of the following questions, a conclusion is made out of two assumptions. Your task is to consider each assumption first and decide about the conclusion offered, whether the conclusion is

(A) True (B) False (C) Irrelevant (D) Probably False (E) Uncertain.

Assumptions may be absurd, but the conclusion is very much related to the assumptions.

Assumptions	Conclusions
1. (i) LPG is a gas. (ii) This cylinder contains gas.	So this cylinder contains LPG
2. (i) Aeroplanes have no wings. (ii) Animals have no wings.	Therefore, aeroplanes are animals.
3. (i) No number over 30 can participate in the summit. (ii) Gopal participated.	So, Gopal is less than 30 years old.
4. (i) Some children are old. (ii) All old are young.	So, some young are children.
Answer: A Same as Ans. 3.	

Practice Questions

Assumptions	Conclusions
1. (i) I know a police officer. (ii) He drinks too much.	So, all police officers drink too much.
2. (i) All red wines are in red bottles. (ii) Red wine is good for health	So, drinking from red bottle is good for health.
3. (i) All cars are buses. (ii) All buses are jeeps	Therefore, all cars are jeeps.

4. (i) Every peon is a manager.
(ii) Every manager is a clerk.
- So, every peon is a clerk.
5. (i) Carbohydrates are helpful in the formation of body.
(ii) Growing children are in need of good nutrition.
- Carbohydrates are necessary for growing children.
6. (i) Boys mostly enjoy kite-flying.
(ii) Girls mostly like to play with dolls.
- Girls are more intelligent than boys.
7. (i) Footballers generally do not marry.
(ii) Ronaldo is a Brazilian footballer.
- Ronaldo should remain a bachelor.
8. (i) The feet of peacocks are ugly.
(ii) Peacocks dance gloriously.
(iii) Cranes also dance gloriously.
- The feet of a crane should be ugly.
9. (i) Few Europeans dare to purchase of houses which are affected by ghosts.
(ii) Europeans never like to purchase houses which are near old forts.
- Houses which are near old forts, are affected by ghosts.
10. (i) All girls take interest in modelling.
(ii) 'Y' has no interest in modelling.
- 'Y' is not a girl.
11. (i) Many Hindus and Sikhs go to Pakistan on pilgrimage.
(ii) Many Muslims come to Indian shrines from Pakistan.
- There is a mutual agreement between India and Pakistan.
12. (i) Carrier correspondence is helpful to people.
(ii) Anybody may take a diploma without reading in class.
- For such a course, to read in an institution is a wastage of time.
13. (i) Most of murderers leave a proof. His murderer is sure to be arrested.
(ii) Prem Chopra was murdered by someone.
14. (i) P is behind M and N.
(ii) Q is behind P.
- Q is behind M
15. (i) Birds fly in the air.
(ii) Fish swim in the sea.
- Lions walk on the ground.

Answers and Explanations

1. Both the assumptions are relational proposition and one characteristic cannot be applied to all.
2. A red bottle may or may not contain red wine.
3. Relational argument, so one contains the other.
4. Same as Ans. 3.
5. (a)
6. (c)
7. (e)
8. (e)
9. (e)
10. (a)
11. (a)
12. (b)
13. (e)
14. (c)
15. (a).

TYPE 5: ANALYSIS OF STATEMENTS

In such questions, a problem is posed in an interrogative sentence followed by two arguments, one of which begins with YES, and other with NO. To arrive at a correct answer, the following points are to be borne in mind.

- (a) The arguments should be factual, i.e. based on facts and not on assumption.
- (b) The arguments should be specific and not generalised.
- (c) The argument should be in conformity with the prevailing ideas and truth and should support the current thinking of the majority.
- (d) There should not be any kind of ambiguity in the arguments.

The questions below, an example of question format, is followed by two arguments I and II. You have to decide which of the two arguments is strong and which is weak and mark the answer choice based on the following:

- (a) Only I is strong.
- (b) Only II is strong.
- (c) Both I and II are strong.
- (d) Either I or II is strong.
- (e) Neither I nor II is strong.

Statement: Computerisation in offices is a must to provide efficient services to the citizens.

Arguments: (I) Yes, because the work is done quickly and time is not wasted.
 (II) No, it will generate more unemployment.

Solution: (a) The argument (I) is quite strong to support computerisation in offices.

Illustrations

Directions: In each of the following questions, a statement is followed by two arguments numbered 'X' and 'Y'. Your task is to consider each statement and the arguments that follow and decide which of the argument is forceful and to what degree. You are to pick up one of the following to indicate your answer.

- (A) Argument 'X' is forceful.
- (B) Argument 'Y' is forceful.
- (C) Neither 'X' nor 'Y' is forceful.
- (D) Both 'X' and 'Y' are forceful.
- (E) Both 'X' and 'Y' are irrelevant.

1. Statement: Should our country leave democracy?

Arguments

- X. Yes, as elections are giving hung parliament everytime.
- Y. No, dictatorship will be even worse.

Answer: C

2. Statement: Should India take the services of an European coach for its national hockey team?

Arguments

- X. Yes, because Asian hockey is dying.
- Y. No, because Europeans will learn about Indian hockey skills by doing so.

Answer: C

3. Statement: Should India go for only two major political parties.

Arguments

- X. Yes, because so many parties are leading to a hung parliament at the centre.
- Y. No, because fewer parties will limit the choice of the voters.

Answer: A

4. Statement: Should liquor be banned throughout the country?

Arguments

- X. Yes, as it will minimise road accidents.
- Y. No, it will effect revenue collection in the country.

Answer: B

5. Statement: Should trade unions be banned?

Arguments

- X. Yes, as they create a lot of problem for industrialists.
- Y. No, as they take care of the rights of the labour working in the industries.

Answer: B

Practice Questions

1. **Statement:** Should national highways in India be given to private companies, for maintenance?

Arguments

- X. Yes, because they will maintain it better than government agencies.
- Y. No, because they are meant for public.

2. **Statement:** Should the education system of India be changed?

Arguments

- X. Yes, because sphere of knowledge around the globe is increasing.
- Y. No, because it is a time-tested system.

3. **Statement:** Should India and Pakistan unite?

Arguments

- X. Yes, because East & West Germany has also united.
- Y. No, because USSR could not keep itself together.

4. **Statement:** Should professional education in India be made free of cost?

Arguments

- X. Yes, as this will make all our citizens professionals.
- Y. No, as the competition will become even more light.

5. **Statement:** Should military training be made compulsory to Indian youth?

Arguments

- X. Yes, as it will discipline the Indian youths.
- Y. No, as the youth can move its way to military.

6. **Statement:** Open book system should be introduced in the examination.

Arguments

- X. Yes, because it will eradicate practice of mass-copying from examination system.
- Y. No, because then all students will get first division without much hard work.

7. **Statement:** Should colleges be given the status of a university in India?

Arguemnts

- X. Yes, colleges degrees will be more valid as grading will be made by the college.
- Y. No, as with this the degrees will loose their significance and nepotism and corruption in awarding degrees cannot be ruled out.

8. **Statement:** Should workers be allowed to participate equally in management of factories?

Arguments

- X. Yes, everybody will be responsible for performance of the company.
- Y. No, how can illiterate workers can contribute.

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6. People who can read and write all the languages are represented by

- (A) L (B) J (C) M (D) K (E) I

Answer: (C)

7. People who can read and write all the languages except Urdu are represented by

- (A) K (B) M (C) B (D) I (E) D

Answer: (D)

8. People who cannot read and write English, Hindi and Punjabi are represented by?

- (A) L (B) K (C) C (D) E (E) F

Answer: (D)

9. People who cannot read and write Urdu and Punjabi, but are conversant with English and Hindi both are represented by?

- (A) M (B) B (C) J (D) K (E) I

Answer: (B)

10. People who do not know English and Hindi but are familiar with Urdu and Punjabi both are represented by

- (A) F (B) G (C) E (D) K (E) M

Answer: (A)

11. Which language is known by maximum number of people as per above diagram?

- (A) Punjabi (B) English (C) Hindi (D) Urdu

(E) Can't be determined

Answer: (C)

12. How many people know only Urdu?

- (A) 40 (B) 10 (C) 20 (D) 60 (E) 50

Answer: (C)

13. How many people know Urdu or Punjabi?

- (A) 40 (B) 20 (C) 80 (D) 60 (E) 65

Answer: (D)

14. How many people can read and write only one language except Punjabi?

- (A) 120 (B) 140 (C) 100 (D) 160 (E) 180

Answer: (B)

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8. The number of students in total who took History or Mathematics or Science was
 (A) 183 (B) 480 (C) 262 (D) 340 (E) 195
9. The number of students who took both History and Geography among other subjects was
 (A) 60 (B) 65 (C) 66 (D) 62 (E) 63
10. Which subject was taken by the largest number of students?
 (A) Science (B) History (C) Geography (D) Mathematics
 (E) Cannot be determined

Questions (11-14): Refer to the following diagram:

- Government employees
- Urban people
- Graduates
- Teachers

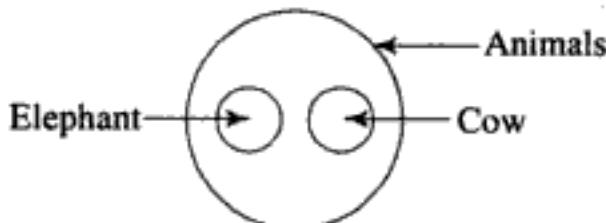


11. Which of the following statements is true?
 (A) All urban peoples are graduates.
 (B) All graduates are urbans.
 (C) All urban government employees are graduates.
 (D) All teachers are urban people.
12. Choose the correct statement.
 (A) There are some Urban teachers who are government employees as well as graduate.
 (B) No teacher is a government employees.
 (C) All graduates are government employees.
 (D) All government employees are urban people.
13. Mark the correct statement.
 (A) All non-urban teachers are government employees.
 (B) All urban government employees are teachers.
 (C) There are some non-urban graduates who are neither teachers nor government employees.
 (D) All urban government employees are graduates.

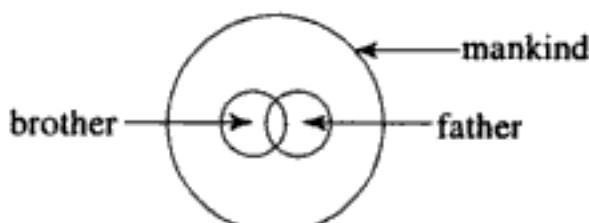
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Answers and Explanations

1. (a) Cows and elephants are two separate classes and both come under a broader class of animals.



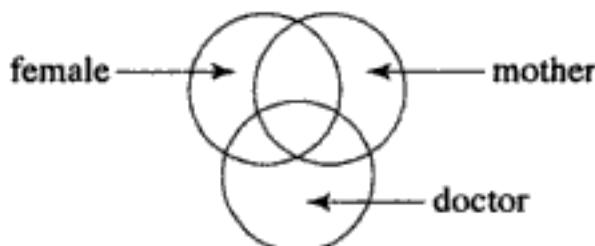
2. (c) A father may or may not be a brother also. This can be represented by two intersecting circles. However, they are both covered under the broader class of mankind.



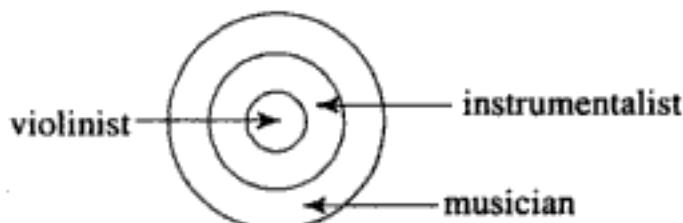
3. (b) Snake, snake-charmer and basket are three distinct items and as such can be represented by three separate circles.



4. (d) All mothers are females but all females are not mothers. Therefore, they are represented by intersecting circles. As doctors can be male or female, this class is represented by another circle intersecting both the intersected circles.



5. (e) Violinists come under the class of instrumentalists and also come under wider class of musicians as shown below:



How to Tackle Such Questions?

To tackle such questions note the step-wise explanations of each type of relationship which is possible. There are three possible relationships between any two different classes or objects. One may contain the other, the two may intersect, or the two may be totally separate. These relationships can be graphically represented by the following examples:



Animals, cows

Means that one class (animals) contains all the members of the other (cows).



Professors, doctors

Means that each class has some members that are members of the other class and some members that are not members of the other class.



Animals, men

Means that the two classes have no members in common. In other words, they are separate classes.

Once you have determined the relationship between two classes, adding a third class means that you have to determine two more relationships. If the three classes are called (X), (Y) and (Z), the three relationships are (X) to (Y), (X) to (Z) and (Y) to (Z). For example:

1. Animals, Men, Trees



This shows three separate classes.

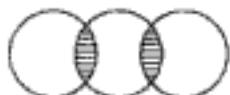
2. Oceans, Pacific Ocean, Water Bodies.



This shows three classes. Each class either contains another class, or is contained within another class. In the above example, the inner circle

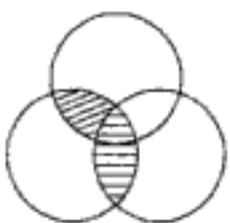
represents *Pacific Ocean* which belongs to the class of *oceans*, the second largest circle. The outer circle shows all *water bodies*. The outermost class encompasses oceans, since all oceans are water bodies but some water bodies may not be oceans.

3. Parrots, males, mammals



Parrots and *Mammals* are separate classes and are represented by the left and right circles respectively. The class of *males* in the middle, intersects each class. Some males are mammals and some mammals are not male. Some males are parrots and some parrots are not male.

4. Athletes, Stars, Men



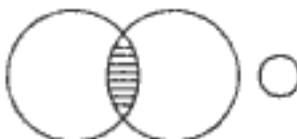
Each class intersects every other class. It means there are some members belonging to all the three classes, and each of the three classes has some members that belong to neither of the other two classes.

5. Human beings, mothers, robots



Since the mothers belong to the class of human beings and some human beings are not mothers, the circle representing human beings contain the circle representing mothers. Since no robots are human beings, the circle representing robots is separate from that representing human beings.

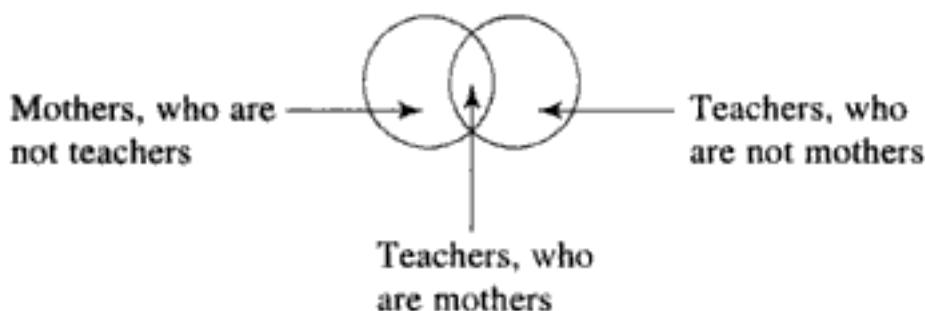
6. Father, brother, sister



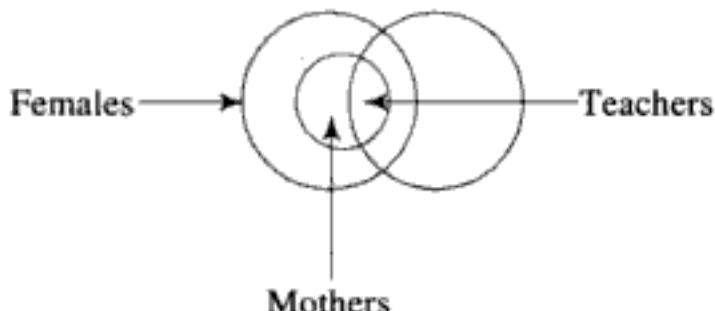
Since *father* and *brother* are males and sisters are females, sisters are represented by the circle separate from the other two. Since some, but not all, fathers are brothers and some brothers are not fathers, this is represented by intersecting circles.

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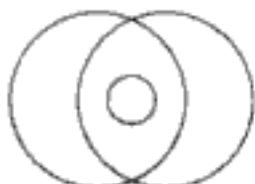
(b) *Mothers and teachers* form an intersecting set, since some, but not all, mothers are teachers and some, but not all, teachers are mothers.



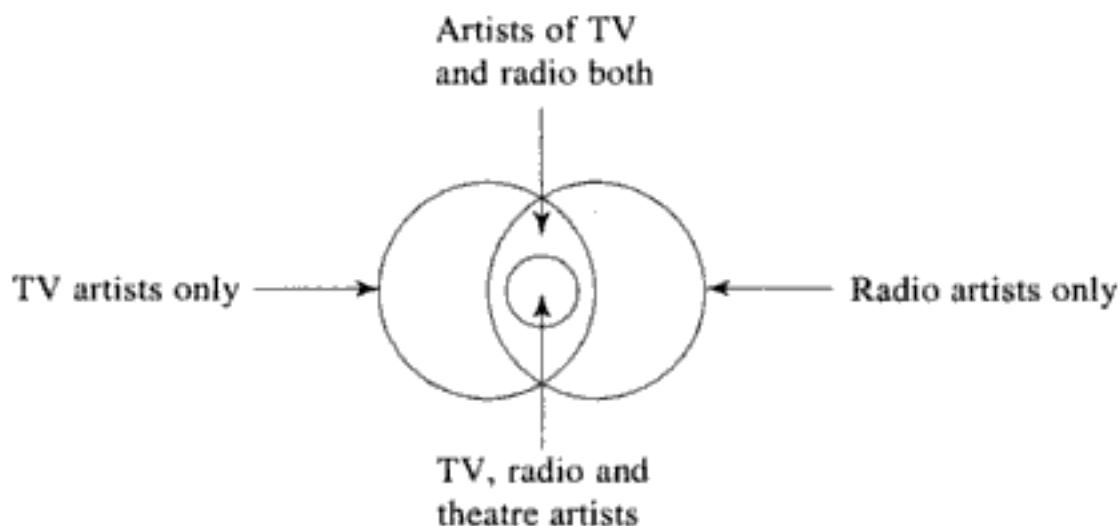
(c) *Females and teachers* also form intersecting sets, since some, but not all females are teachers and some, but not all, teachers are females, and all mothers are females.



10. Radio artists, TV artists, Theatre artists

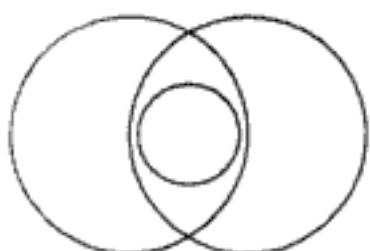


The classes of TV artists and radio artists intersect. Some people give performances on both TV and radio, and some artists give performance only in TV programmes or only in radio programmes. The class of people who are artists of TV, radio and theatre must be a subset of the set consisting of artists of both TV and radio.

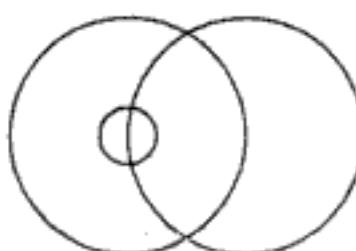


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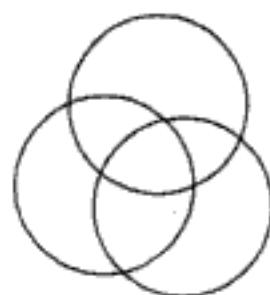
Questions (6-15): Refer the diagram given below:



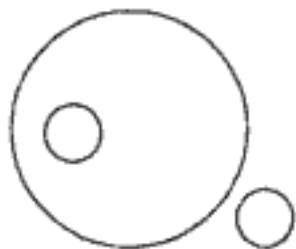
A



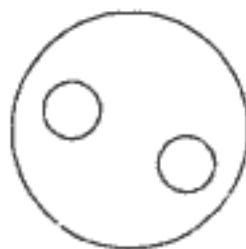
B



C



D



E

6. Animals, Cows, Dogs

Answer: E

7. Cousins, Males, Nephews

Answer: B

8. Women, Story teller, Liars

Answer: C

9. Teachers, Surgeons, Musicians

Answer: C

10. Students, Females, IAS aspirants

Answer: C

11. Bedroom, Sitting room, Dwellings

Answer: E

12. Civil Engineer, Boiler Engineer, Engineers

Answer: E

13. People, Doctors, Cows

Answer: D

14. Typewriters, Reading materials, Magazines

Answer: D

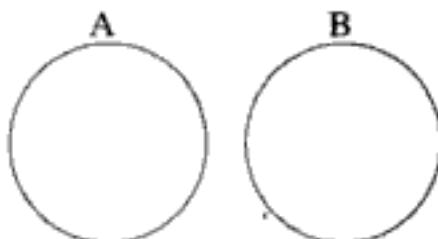
15. Policemen, Magistrates, Human beings

Answer: E

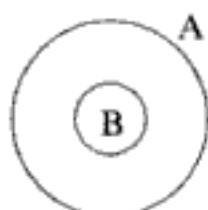
Tips to Solve such Questions

To solve such questions, the following relationships between various diagrams should be borne in mind

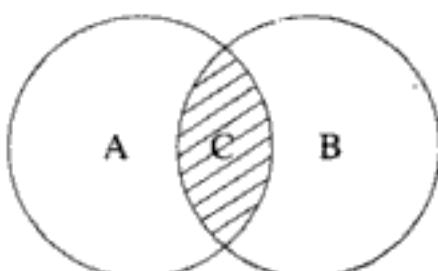
1. A and B here represents 2 different items of population having no relationship with each other.



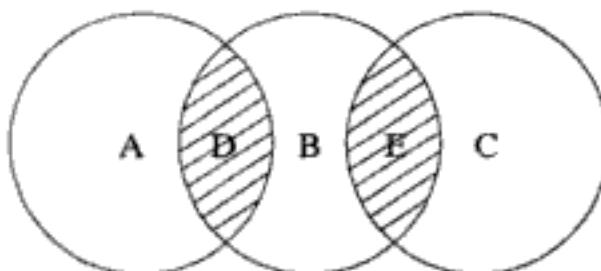
2. Represents that one class/category is contained in the other.



3. Represents that neither class/category is contained fully in each other but have some numbers in common.



4. Represents that there are 3 groups/categories/segments. None of them is fully contained within the other but they have members in common.

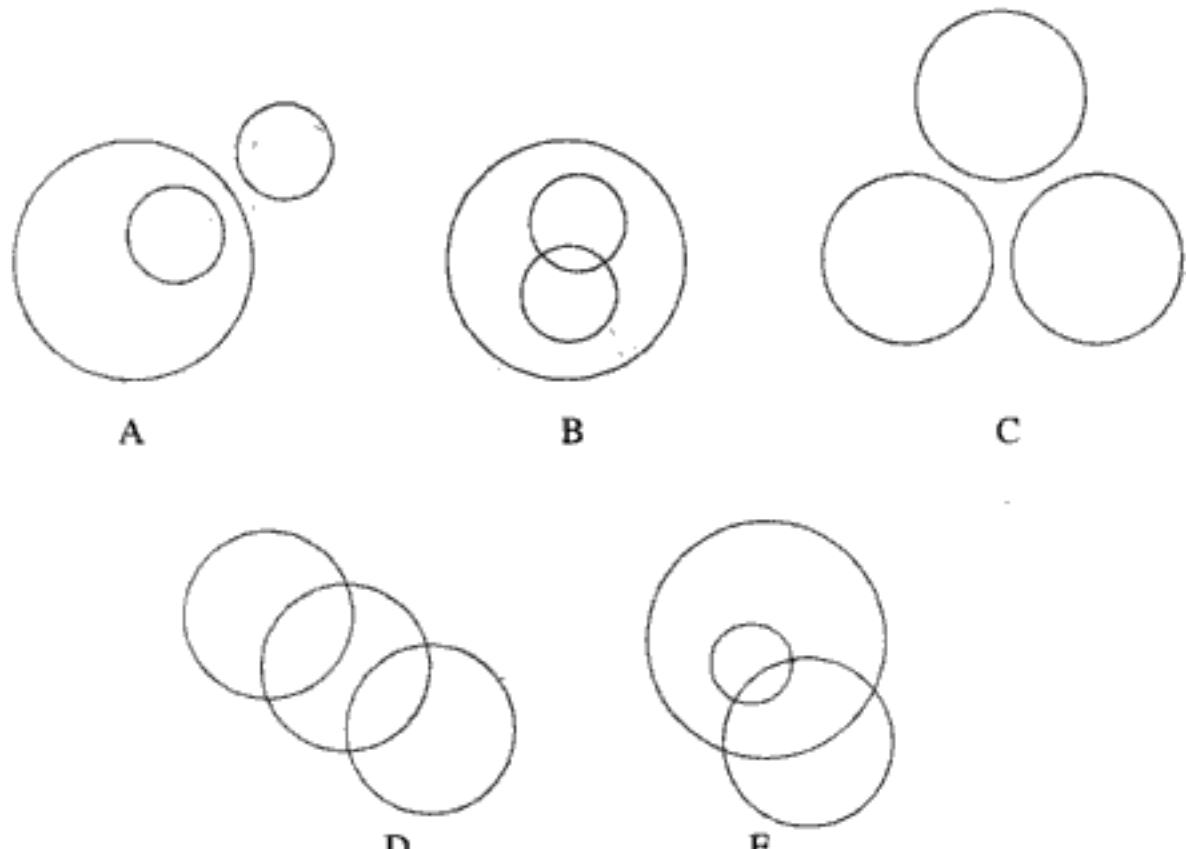


5. Represents that two groups are completely contained in a bigger class of the population.

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8. Alleged terrorists, Prisoners, Terrorists
9. Typewriters, Electric typewriters, Electronic typewriters.
10. Doctors, Surgeons, Married people

Questions (11-20):



11. Male, Father, Book
12. Family, Spouse, Husbands
13. Doctors, Human beings, Cows
14. Social workers, Alcoholics, Tetotallers
15. Females, Mothers, Nurses
16. Dogs, Rabbits, Rats
17. Females, Mothers, Sisters
18. Beef, Mutton, Eggs
19. Students, Married people, Human beings
20. Husbands, Brothers, Males

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Answer: (a) We can solve this question in one of two methods as shown below.

- Take another example. If all dogs are animals and no animals are plants, then no plants are definitely dogs.
- Draw Venn's diagram.

It is therefore *true* that no chair is definitely a book.



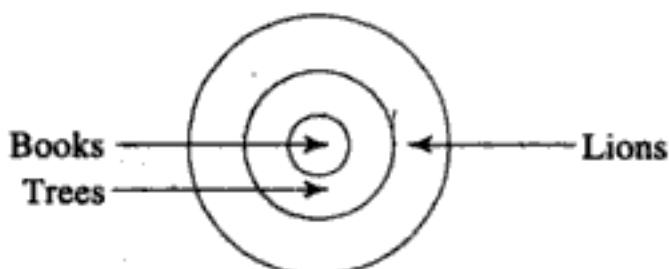
Q. 2 to 7: Directions: In each of the following questions, there are two statements (A) and (B) followed by four conclusions numbered I, II, III and IV. Though the statements are at variance from commonly known facts, you have to assume them to be true. Read the conclusions and, based on the information given in statements (A) and (B), decide which of the opinions follow from A and B.

2. Statements: (A) All books are trees. (B) All trees are lions

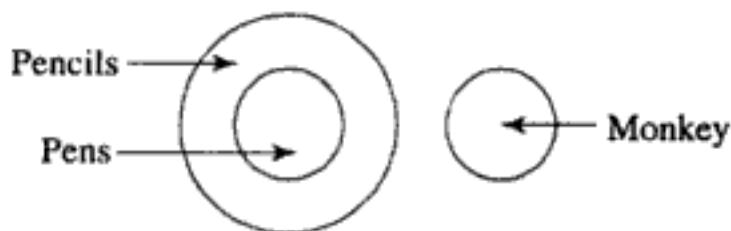
Conclusions

- All books are lions.
 - All lions are books.
 - All trees are books.
 - Some lions are books.
- Only II and III follow.
 - Only I and IV follow.
 - None of the conclusions follow.
 - All conclusions follow.

Answer: (b) From Statement (A) (all books are trees) and statement (B) (All trees are lions), it is clear that all books are lions (conclusion I), but not that all lions are books or all trees are books (conclusion II and III). However, some lions can be books (conclusion IV). Hence, conclusions II and III are not applicable and only I and IV can be inferred. The Venn diagram will make the situation clear.



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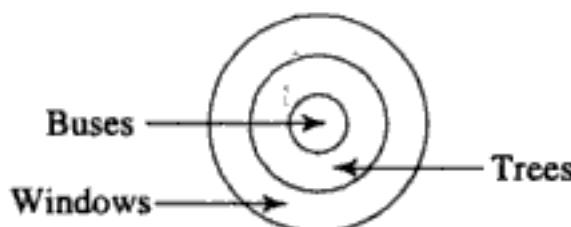
**5. Statements:**

- A. All buses are trees.
B. All trees are windows.

Conclusions

- I. All buses are windows.
II. All windows are buses.
III. All trees are buses.
IV. Some windows are buses.
(a) Only I and II follow.
(b) None of the conclusions follow.
(c) Only II and III follow.
(d) Only I and IV follow.

Answer: (d) When all buses are trees and all trees are windows (statements A and B), it implies that all buses are windows (conclusion I), but all windows cannot be trees and all trees cannot be buses. However, some windows can be buses (conclusion IV). Study the following Venn diagram which will make the situation clear.

**Practice Questions****1. Statements**

- A. All goats are tigers.
B. All tigers are lions.

Conclusions

- I. All tigers are goats.
II. All lions are tigers.
III. No goat is a lion.
IV. No lion is a goat.

- (a) Only III and IV follow
- (b) Only I and II follow
- (c) None of the conclusions follow
- (d) All conclusions follow.

2. Statements:

- A. Some skirts are benches.
- B. No bench is a table.

Conclusions

- I. Some skirts are tables.
 - II. Some benches are skirts.
 - III. All benches are skirts.
 - IV. Some tables are skirts.
- (a) Only I follows
 - (b) Only II follows
 - (c) Only II and IV follow
 - (d) None of the conclusions follow.

3. Statements:

- (A) All chairs are tables.
- (B) Some table are sofa sets.

Conclusions

- I. Some sofa sets are chairs.
 - II. All sofa sets are chairs.
 - III. Some chairs are sofa sets.
 - IV. All chairs are sofa sets.
- (a) All conclusions follow
 - (b) Only I and II follow
 - (c) None of the conclusions follow
 - (d) Only II and III follow

4. Statements:

- (A) No book is a pencil.
- (B) All pencils are erasers.

Conclusions

- I. No pencil is a book.
- II. Some erasers are books.
- III. No eraser is a book.
- IV. No pencil is a book.

- (a) Only I and IV follow.
- (b) None of the conclusions follow.
- (c) Only I, II and IV follow.
- (d) All the conclusions follow.

5. Statements:

- (A) All men are women.
- (B) All women are crazy.

Conclusions

- I. All men are crazy.
- II. All the crazy are men.
- III. Some of the crazy are men.
- IV. Some of the crazy are women.
- (a) None of the conclusions follow
- (b) All the conclusions follow
- (c) Only I, III & IV follow
- (d) Only II and III follow

6. Statements:

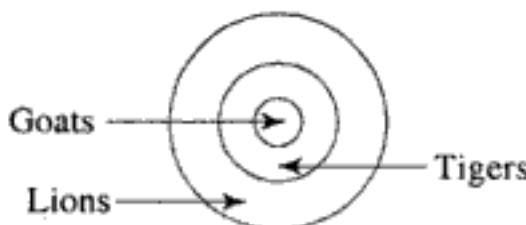
- (A) Some donkeys are elephants.
- (B) Some elephants are cats.

Conclusions

- I. Some cats are donkeys.
- II. Some donkeys are cats.
- III. Some elephants are donkeys.
- IV. Some cats are elephants.
- (a) None of the conclusions follow
- (b) Only II and III follow
- (c) All the conclusions follow
- (d) Only I, II and IV follow

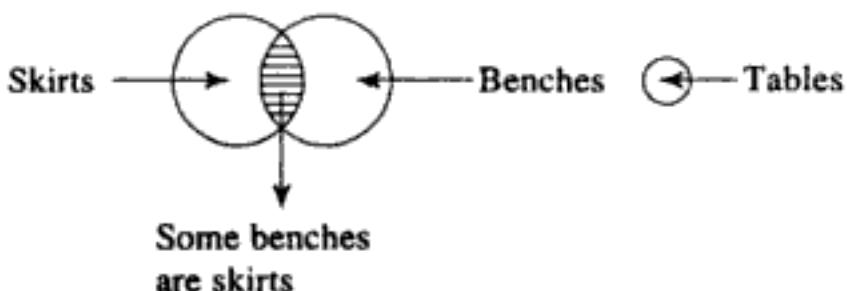
Answers and Explanations

1. (c) From statement (A) and (B), all goats are tigers and all tigers are lions. This implies that all goats are lions. Hence no conclusion follows. Study the following Venn diagram.

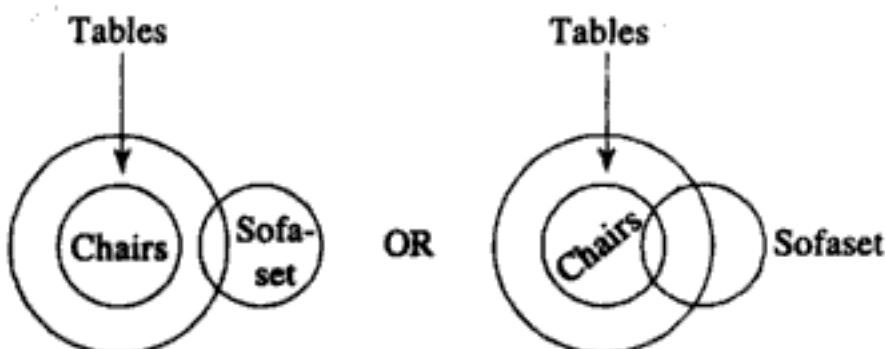


2. (b)

From statement (A), some skirts are benches, therefore some benches are skirts. Tables have no relationship with either of these. Hence only conclusion II follows. Study the following diagram.

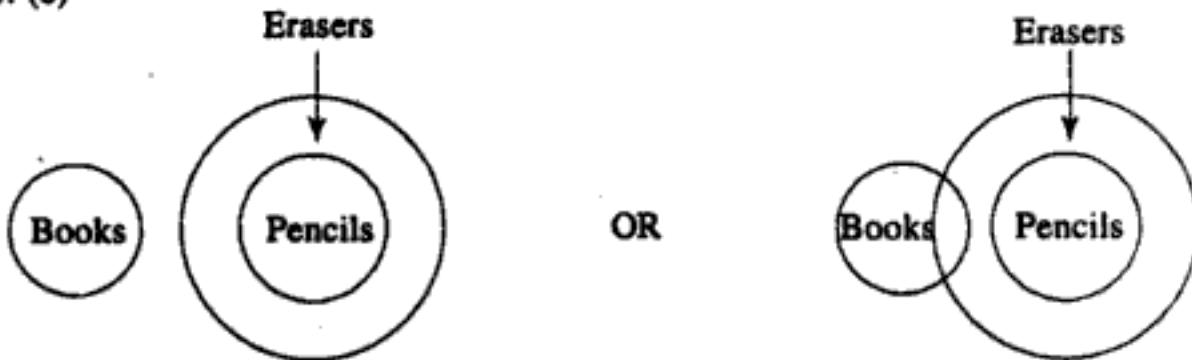


3. (c)

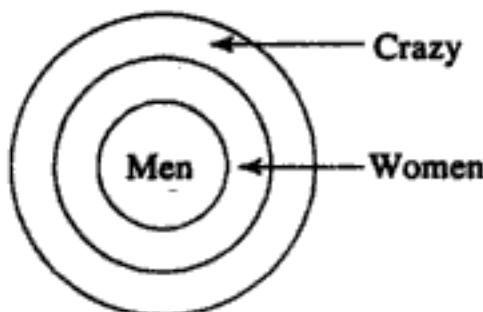


Either I and II follows. Since the given choices have different conclusions, the answer will be (c). None of the conclusions follow.

4. (c)



5. (c)



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1. How is Rajinder related to Raju?

- (A) Brother (B) Uncle (C) Brother-in-law
 (D) Cousin (E) Maternal Uncle

Answer: B

2. How is Rajinder related to Ashok?

- (A) Brother-in-law (B) Father-in-law (C) Cousin
 (D) Uncle (E) Maternal Uncle

Answer: E

3. How is Rakesh related to Surinder?

- (A) Brother (B) Cousin (C) Uncle
 (D) Maternal Uncle (E) Brother-in-law

Answer: E

4. How is Rakesh related to Rita?

- (A) Brother (B) Cousin (C) Uncle
 (D) Maternal uncle (E) Brother-in-law

Answer: D

5. What is Sanjay's Surname?

- (A) Bhaskar (B) Jain (C) Maudgil
 (D) Surinder (E) None of the above

Answer: A

6. Renu is Sanjay's

- (A) Sister (B) Sister-in-law (C) Cousin
 (D) Niece (E) Aunt

Answer: E

7. Raju's Surname is

- (A) Jain (B) Bhaskar (C) Maudgil
 (D) Surinder (E) None of the above

Answer: C

8. Sunil and Rakesh are related as

- (A) Brothers (B) Cousins (C) Uncle and Cousin
 (D) Brother-in-law (E) None of the above

Answer: D

Practice Questions

Directions: The questions (1-4) pertain to the following information. Amit is the son of Rahul. Sarika, Rahul's sister has a son Sonu and a daughter Rita. Raja is the maternal uncle of Sonu.

1. How is Amit related to Sonu?
 (A) Nephew (B) Cousin (Brother) (C) Uncle
 (D) Brother (E) None of these
2. How is Rita related to Raja?
 (A) Sister (B) Daughter (C) Niece
 (D) Aunt (E) None of these
3. How many nephews does Raja have?
 (A) 1 (B) 2 (C) 3 (D) 4 (E) None
4. What is the relationship of Raja with Rita?
 (A) Uncle (B) Brother (C) Maternal Uncle
 (D) Nephew (E) Can't be determined

Directions: Following information pertains to Ques. 5-7.

There are six persons S1, S2, S3, S4, S5 and S6.

S3 is the sister of S6.

S2 is the brother of S5's husband.

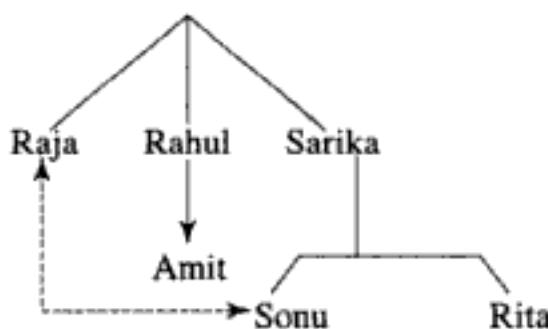
S4 is the father of S1 and grandfather of S6.

There are 2 fathers, one mother and 3 brothers in the family.

5. Who is S5's husband?
 (A) S2 (B) S3 (C) S1 (D) S4 (E) S6
6. Who is the mother?
 (A) S1 (B) S2 (C) S3 (D) S5 (E) cannot be determined
7. How many male members are there?
 (A) 1 (B) 2 (C) 3 (D) 4 (E) Cannot be determined

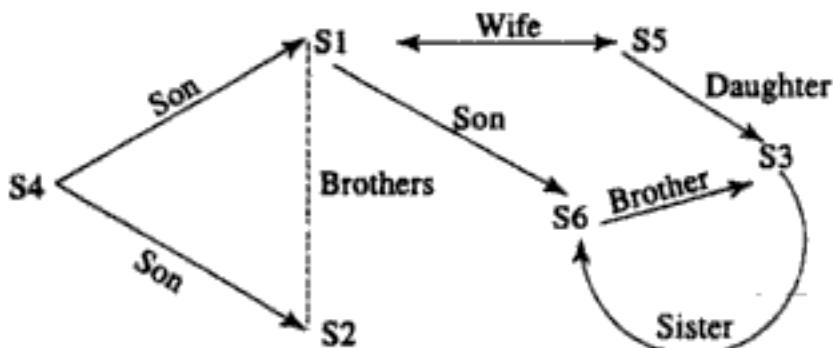
Answers and Explanations

Questions (1-4) can be answered with the help of the following diagram.



1. (B)
2. (C)
3. (B)
4. (C)

Questions (5-7) are as per the following diagram.



5. (C) 6. (D) 7. (D)

TYPE 9: AGE DOUBTS

This forms a part of logical reasoning which requires the ability to reason with numbers, and to deal with quantitative materials and ideas using commonsense as well as quick calculation techniques.

In other words, you have to deal with figures for which you should have basic knowledge concerning quick calculations, a list of Algebra, techniques of interpreting data given in the form of tables, puzzles etc.

For instance, go through the following examples and find out how common sense application alongwith aptitude to solve general mathematical problems can help comprehending these puzzles.

Illustrations

1. 5 years ago, the combined age of my mother and mine was 40 years. Now, the ratio of our age is 4:1. How old is my mother?

- (A) 10 (B) 40 (C) 60 (D) 20 (E) 50

Answer: (B)

Let us suppose, my age today is 'A' year.

Then my mothers age, which is four times of my age is 4A. Five years ago, my age would have been (A-5) and that of my mother was (4A- 5)

Now, at that time our combined age was 40.

This means $(A-5) + (4A-5) = 40$.

This leads to $5A - 10 = 40$ or $A = 10$ years.

Thus, today my mother is 4 A = 40 years of age.

Therefore, (B) is the right choice.

2. Honey was twice as old as Vani 10 years ago. How old is Vani today if Honey will be 40 years old 10 years hence?

- (A) 20 (B) 25 (C) 15 (D) 35 (E) 30

Answer: (A) Honey's age today is 30 years.

Her age 10 years was 20 years.

Vani's age 10 years ago would have been = 10 years.

Therefore, we can conclude that Vani's age today is 20 years and not more.

Therefore, (A) is the right answer.

3. One year ago, a mother was 4 times older to her son. After 6 years, her age become more than double her son's age by 5 years. The present ratio of their age will be?

(A) 13 : 12 (B) 11 : 3 (C) 3 : 1 (D) 25 : 7 (E) 4 : 3

Answer: (D) One year ago if the Son's age was 'A' years, then the mother was '4A' years old. After 6 years, we conclude that

$$4A + 1 + 6 - 2(A + 1 + 6) = 5,$$

which leads to $A = 6$

Now the ratio of their ages today will be

$$(4A + 1) : (A + 1) = 25:7$$

Therefore, (D) is the right answer.

4. Vandana's mother is twice as old as her brother. She is 5 years younger to her brother but 3 years older to her sister. If her sister is 12 years of age, how old is her mother?

(A) 30 (B) 35 (C) 45 (D) 40 (E) 50

Answer: (D) Vandana's age should be 15 years as she is 3 years older to her sister who is 12 years of age. Her brother is therefore 20 years of age and her mother is 40 years old.

5. Sonu is 4 years younger to Manu while Dolly is four years younger to Sumit but $1/5$ times as old as Sonu. If Sumit is eight years old, how many times as old is Manu as Dolly?

(A) 3 (B) $1/2$ (C) 2 (D) 1 (E) $1/4$

Answer: (A) Dolly's age is $(8 - 4) = 4$ years and Sonu's is $4 \times 4 = 16$ years, this means Manu's will be $(16 - 4) = 12$ years. Therefore, Manu is 3 times older to Dolly.

6. In the above question, Sonu's age will be

(A) 18 (B) 23 (C) 16 (D) 24 (E) 15

Answer: (C)

7. Our mother is 3 times as old as my brother and I am $1/3$ rd times older than my brother. If 4 years ago I was as old as my brother today, what is the age of my mother.

(A) 40 (B) 36 (C) 44 (D) 42 (E) 48

Answer: (B) 4 years ago my age was what my brother's age is today. Thus, he is $4 \times 3 = 12$ years old today and my mother, therefore is $12 \times 3 = 36$ years of age.

Practice Questions

- Ruchi's age was double that of Niti 2 years ago. If Ruchi was 2 years older to Niti then, try to guess how old she is today.
 (A) 6 (B) 4 (C) 8 (D) 2 (E) 20
- If we add the age of three brothers Sunil, Sanjay and Sonu, then it becomes 60 years today. If 6 years ago the Sonu was of half the age of Sanjay and 1/3rd to the age of Sunil, then find out the present age of Sanjay.
 (A) 14 (B) 15 (C) 16 (D) 18 (E) 24
- Sonu's age is 2/3rd of Manu's. After 5 years Sonu will be 45 years old. Manu's present age is
 (A) 55 (B) 56 (C) 58 (D) 60 (E) 64
- Ratio of Sonu's age to Manu's is equal to 4:3. If Sonu will be 26 years old after 6 years, the present age of Manu is
 (A) 11 (B) 15 (C) 14 (D) 17 (E) 13
- Binny is born on 1st October. He is younger to Sunny by one week and two days. If on 1st October it was a Saturday, then Sunny's birthday will come on which day this year?
 (A) Wednesday (B) Thursday (C) Monday
 (D) Saturday (E) Sunday
- Binny is half as old as Sunny. Chinky is twice old as Sunny. How many times is Chinky as old as Binny?
 (A) 6 (B) 4 (C) 8 (D) 3 (E) 2
- My age becomes half that of my brother's if we simply add 2 years to his present age. If I am 25 years old today, my brother will be
 (A) 46 (B) 48 (C) 44 (D) 36 (E) 38
- My age is 2 years less than twice that of my brother. If I am sixteen years old, how old is my brother?
 (A) 3 (B) 18 (C) 9 (D) 27 (E) -6

Answers and Explanations

- 1.(C) Let Niti's age 2 years ago be 'A' years.
 Then, Ruchi's age was '2A'.
 Now, $2A - (A + 2) = 2$, this leads to $A = 4$.
 Thus, Ruchi is 8 years old today.
- 2.(A) The combined age of three brothers 6 years ago was
 $(A + 6) + (2A + 6) + (3A + 6) = 60$.
 $6A + 18 = 60$
 $6A = 42$ or $A = 7$

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OVERVIEW OF TYPES OF QUESTIONS

Format 1: Sitting Arrangement Problems

These are the most common situations asked in the examinations. Such situations generally involve three to eight individuals arranged in a certain fashion. One may find the situations such as five men standing in a line or six people sitting around a table in a particular order. Sometimes such questions are made more difficult by allowing more than one individual to a particular position with some conditions.

Format 2: Schedule Building

These are another type of arrangement questions which define situations in which arrangements are to be made based on time parameters.

The common situations are a student scheduling his classes during a week, part-time employees hired to fulfil a job in a particular time slot etc., or time table building on an airport or bus-stand.

Another type of schedule-building questions includes programme problems, where a series of possible events are described and certain questions are asked based upon that problem.

Format 3: Transaction Analysis (Symmetrical Relationships)

This type contains situations where selection of candidates or individuals is carried on the basis of certain conditions and restrictions. Also included in this type are situations where the information about characteristics of individuals are present and one individual may or may not possess those characteristics. Common situations include people who speak different languages or belong to different religious or families or possess different cars/dogs, etc.

In most of the analytical reasoning questions, the information provided is not complete and the possible inter-relationships are not specified fully. This leaves a lot for the manipulations of the conditions to analyze the situation and make out inter-relationships. Therefore, when we make use of diagrams or charts to understand the situation, the weak links are highlighted which makes it easier to solve the problem.

Generally, following types of questions are asked from the situation which require you to consider all of the informations provided in the situations. The types are

- Analysis questions
- New specifics questions
- New conditions questions

Now, the analysis questions demands is to explore the situation and apply our commonsense to solve the problems. Also included in this type are questions

which ask you to determine the possible arrangements, combinations, orders, schedules, time tables, etc. or the number of possibilities or occurrences etc.

When the informations are not all that comprehensive and the inter-relationships are missing to a great deal, then a new specific is provided to fill in those missing limits. The questions generally asked in this type are - 'If this happens, who will go or not go' or 'How many chances will be left if this happens?' etc.

In new condition questions, a new conditions is introduced and then analysis of the question is asked for from the very start. Whenever a new condition is applied, certain links or relationships get modified. For such questions, its always better to start with the due modification of your earlier completed structure or diagram, but if the time persists, one is adviced to make a fresh start and put together all the information again as in many cases, the complete linkages or relationships take a twist.

Illustrations

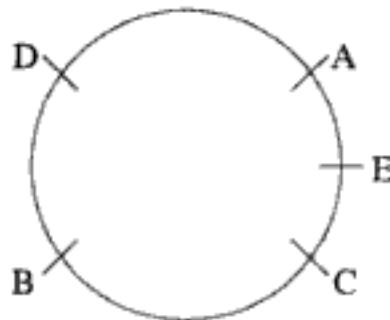
Directions (1-3): Study the following statements, marked (A), (B) and (C) and answer the questions given below:

(A) A, B, C, D and E are five boys sitting in a circle.

(B) C is sitting immediately to the left of E.

(C) A is sitting between D and E.

For Questions 1-3, the following diagram will make the answers clearer.



1. Who is sitting to the immediate left hand side of C?

- (A) E (B) A (C) B (D) D

Answer: C

2. Who is sitting between B and A?

- (A) C (B) E (C) D (D) None

Answer: C

3. E is sitting between

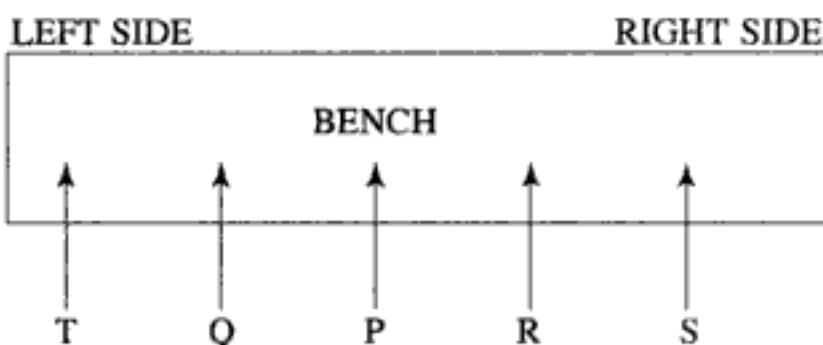
- (A) B and D (B) D and E (C) B and E
(D) A and C

Answer: D

Directions (4-6): Five friends are sitting on a bench in the following order:

- (A) P is sitting next to Q, and R is next to S.
- (B) S is not sitting with T; T is on the extreme left hand side of the bench and R is on second position from the right hand side.
- (C) P is on the right hand side of Q and to the right side of T.
- (D) P and R are sitting together.

The above data can be plotted as given in the following diagram from which the answers will be clearer.



4. Who is sitting exactly in the middle?

- (A) Q (B) R (C) P (D) T

Answer: C

5. Who is sitting to the left of Q?

- (A) S (B) T (C) R (D) P

Answer: B

6. Who is on the extreme right hand side of the bench?

- (A) R (B) T (C) Q (D) S

Answer: D

Practice Questions

Directions (1-3): Six friends are sitting before a dining table in the following order.

- (A) B is sitting opposite to D.
- (B) E is sitting opposite to C.
- (C) A is on the extreme left end of the table facing F.

1. Who is sitting on the left hand side of A?

- (A) D (B) C (C) B (D) E

2. Who is sitting on the right hand side of F?

- (A) B (B) E (C) D (D) C

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5. How many vowels are there to the left of the letter exactly in the middle?

- (A) 1 (B) 2 (C) 3 (D) 4 (E) None

Answer: C

Explanations (1-5): By rewriting the given word as per instructions in the question, the answers will become clearer 'ETNISIDRESTSSENDE'.

Directions (6-7): If the first three letters of the word 'COMPREHENSION' are reversed, then last three letters are added and then the remaining letters are reversed and added, then

6. Which letter will be exactly in the middle?

- (A) H (B) R (C) S (D) N (E) None

Answer: C M O C I O N S N E H E R P

7. Which letter will be fifth from the end?

- (A) S (B) R (C) N (D) E (E) I

Answer: D M O C I O N S N E H E R P

Directions (1-2): Answer the following questions based on the following sequence of alphabets.

a b c d e f g h j i k l m n o r q s t u u u v w x y z.

1. Which alphabets are wrongly placed?

- (A) rt/jl (B) m/j (C) vu/jl (D) jl/rq (E) kq/rq

2. How many alphabets are missing and how many repeated?

- (A) None (B) 3 (C) 2 (D) 3 (E) 5

Directions (3-6): The following questions are based on the given sequence of alphabets

a b c d e g h i j j k l m n o p q r t s u v w x y z.

3. Which letter is missing in the above set of letter?

- (A) j (B) y (C) f (D) v (E) None

4. Which letter is out of its normal position?

- (A) t (B) j (C) d (D) s (E) r

5. How many vowels are there?

- (A) 6 (B) 4 (C) 5 (D) 7 (E) 8

6. Which two letters are sandwiched between two vowels?

- (A) vw (B) hj (C) gh (D) pq (E) np

Answers and Explanations

1. d 2. C 3. C 4. A 5. C 6. C

1. The alphabet 'j' is in place of 'i' and vice-versa.

Similarly 'r' is in place of 'q' and vice-versa.

2. The alphabet 'p' is missing and 'u' is repeated. Hence, one alphabet is missing and one is repeated.

Transactional Analysis

Illustrations

Directions: For each of the following, read the information given and answer the question based on that data

1. (a) A is richer than B.
(b) C is richer than A.
(c) D is richer than C.
(d) E is the richest of all.

If they are made to sit in the above degree of richness who will have the medial position (central position)?

- (a) A (b) B (c) C (d) D (e) E

Answer: (C) E is the richest of all; therefore, he is richer than D. The above relationship can be denoted by $E > D > C > A > B$, where ' $>$ ' stands for 'richer than'.

2. (a) Radha is younger to Sunita but elder to Rita
(b) Rita is elder than Geeta
(c) Sham is older to Rita but younger to Radha. Who is youngest of all?
(a) Rita (b) Sham (c) Sunita (d) Geeta (e) Radha

Answer: (d) Sunita > Radha > Sham > Rita > Geeta

3. (a) Lata is a year older than Sunita
(b) Sunita is two years older than Bindu
(c) Rajan is a year older than Bindu

Who is the youngest of all?

(a) (b) (c)

Lata

Sunita

Rajani

Bindu Bindu

- (a) Sunita (b) Lata (c) Bindu (d) Rajan (e) Can't be determined

Answer: (C) Lata > Sunita > Rajan > Bindu

Questions (4-7):

- (i) A and B play football and hockey
 - (ii) C and D play badminton and cricket
 - (iii) B and C play cricket and football
 - (iv) A and D play hockey and badminton
- 4.** Which one plays badminton, football and hockey?
 (a) A (b) B (c) C (d) D (e) None
Answer: (a)
- 5.** One who plays badminton, football and cricket is:
 (a) A (b) B (c) C (d) D (e) None
Answer: (c)
- 6.** One who plays cricket, football, and hockey.
 (a) A (b) B (c) C (d) D (e) None
Answer: (b)
- 7.** One who does not play cricket
 (a) A (b) B (c) C (d) D (e) None
Answer: (a)

Explanations (4-7): Players who play football = A, B, C

Players who play hockey = A, B, D

Players who play badminton = C, D, A

Players who play cricket = C, D, B

Practice Questions

Directions: A goldsmith has five gold rings, each having a different weight

Statement (1): Ring D weighs twice as much as ring E

Statement (2): Ring E weighs four and one-half times as much as ring F.

Statement (3): Ring F weighs half as much as ring G.

Statement (4): Ring G weighs half as much as ring H.

Statement (5): Ring H weighs less than ring D but more than ring F.

Based on the above statements, answer the following questions

- 1.** Which of the following represents the descending order of weights of the rings?
 (a) D, E, G, H and F (b) E, G, H, D and F (c) H, F, G, D and E
 (d) F, D, G, E and H (e) D, E, H, G and F
- 2.** Which of the numbered statements above is not necessary to determine the correct order of the rings according to their weights?
 (a) Statement 1 (b) Statement 4 (c) Statement 3
 (d) Statement 2 (e) Statement 5

3. Which of the following is the lightest in weight?
 (a) Ring D (b) Ring E (c) Ring F (d) Ring G (e) Ring H
4. If these rings are sold according to their weights as it is, which ring will fetch highest value in rupees?
 (a) G (b) H (c) F (d) D (e) E
5. Ring H is heavier than which of the following two rings?
 (a) GE (b) FG (c) DF (d) DE (e) EG

Answers:

1. (e) 2. (e) 3. (c) 4. (d) 5. (b)

Explanations (1-5): Read through the statements; write down the letters for the rings; identify the ring with the lowest weight; assign it a value 'x'.

D E F G H

x

Read through the statements again and fill in the weight relative to weight of ring F

D	E	F	G	H
$9x$	$4.5x$	x	$2x$	$4x$

Now answers are easy to find.

Questions (6-10): Read the following and answer the questions that follow.

Ankit is decorating his room and trying to arrange six paintings on the east and west walls in his room. The paintings are each multicolour representations of one of the letters of the alphabets E, H, M, O, R, T.

Ankit does not want the three letters on each wall to make any common English word. Also, the colours of the O and E do not look good next to each other, nor do the T and O go well together.

6. If Ankit puts the M, O and T on the west wall, which of the following is true?
- O will be on one end of the west wall.
 - H and R will not be, respectively, the left and right paintings on the east wall.
 - E cannot be in the middle of the east wall.
- (a) I only
 (b) II only
 (c) I and II only
 (d) I and III only
 (e) I, II and III
7. If Ankit puts E, H and M on the east wall, which of the following must be true?
- The E cannot be in the centre of the east wall.
 - The O cannot be in the centre of the west wall.

- (c) The R and M cannot face each other.
 (d) The T and M cannot face each other.
 (e) The H and R cannot face each other.
8. If Ankit's mother is coming to visit and he decides to celebrate the visit by having his paintings spell "MOTHER", starting with the leftmost painting on the east wall and going around the room, which of the following will be false?
- T is next to O
 - H is next to E
 - O is opposite E
 - T is opposite R
 - None of the above is false.
9. Which of the following is not possible?
- H, M and R to be on the same wall
 - T, H and E to be on the same wall
 - T and O to be opposite each other
 - M and O to be opposite each other
 - E and O to be opposite each other
10. If Ankit trades his M painting for another O painting just like the one he has now, which of the following must be false?
- Either R or H will be next to either T or E
 - Either R or H will be next to an O
 - The O's can be on opposite walls in the middle
 - The T will be opposite either O or E
 - All of the above are possible.

Questions (11-15): Read the following and answer the questions that follow.

In Moga city, streets and roads run east-west and alternate with each other at 1/4 kilometer intervals.

- Duncan Street is 1 kilometer north of Marlo Street
 - Marlo Street is 3/4 kilometer south of Ansari Road
 - Thakur Road is 3/4 kilometer south of Marlo Street
 - Masjid Street is 1/2 kilometer south of Marlo Street.
11. Which of these roads or streets is farthest from Marlo Street?
- Duncan Street
 - Thakur Road
 - Thakur Road and Ansari Road are equally far
 - Thakur Road and Duncan Street are equally far
 - Ansari Road

- 12.** An additional road, Royal, could be in any of the following locations except.
- 1/4 km north of Duncan Street
 - 1/4 km north of Marlo Street
 - 1/2 km south of Ansari Road
 - 1 km north of Masjid Street
 - 1 km north of Thakur Road.
- 13.** What is the distance between Ansari Road and Masjid Street?
- 3/4 km
 - 1 km
 - 1-1/4 km
 - 1-1/2 km
 - 2 km
- 14.** Shivalik Road runs directly North-South across Moga's Streets and roads. If a car starts going down Shivalik Road at Ansari Road, then makes a U-turn at Thakur Road and goes back to Masjid Street, about how far does it travel?
- 3-1/4 km
 - 3 km
 - 2-1/2 km
 - 1-1/4 km
 - 2 km
- 15.** What is the greatest distance between any two of the streets named?
- 1 km
 - 1-1/2 km
 - 1-3/4 km
 - 2 km
 - 2-1/4 km

Questions (16-20): Read the following and answer the questions that follow.

DAV College, Chandigarh is selecting a four-person debate team. There are seven candidates of equal ability. X, Y and Z who attended the science block courses and L, M, N and P who attended the commerce block courses. The team must have two members from each block. Also, the members must be able to work well with all the other members of the team. Note that debaters Y and L, Z and N, and L and M are incompatible pairs.

- 16.** If debater Y is rejected and M is selected, the team will consist of
- L, M, X and Z
 - M, N, X and Z
 - M, N, P and X
 - M, N, P and Z
 - M, P, X and Z

17. If debater L is on the team, what other debaters must be on the team as well?
- M, X and Z
 - N, X and Z
 - P, N and Z
 - P, X and Y
 - P, X and Z
18. If both Y and Z are selected, which of the other debaters are thereby assured of a place on the team?
- Both L and M
 - Both M and P
 - Only N
 - Both N and P
 - Only P
19. Which of the following must be false?
- Debaters M and Z cannot be selected together.
 - Debaters N and Y cannot be selected together.
 - Debaters P and Z cannot be selected together.
- I only
 - II only
 - III only
 - I and III
 - I, II and III.
20. Which of the following is true of debator X?
- Debator X must be selected as one of the science block members of the team.
 - Debator X must be selected if N is selected.
 - Debator X cannot be selected if both L and N are rejected.
- I only
 - II only
 - III only
 - I and III
 - I, II and III.

Questions (21-25): Read the following and answer the questions that follow.

- Some Z are not Y
- Some Y are not X
- Some X are not Z
- All X are not Y

21. Which of the following can be deduced from conditions I, II and III?

- There are no X that are both Y and Z
- Some X are not Y

- (c) Some Z are not X
 (d) Some Y are not Z
 (e) None of the above
22. Which of the following must be false, given conditions I, II, III and IV?
 (a) There are no X that are neither Y nor Z
 (b) There are no Z that are not X
 (c) There are no X that are Z
 (d) There are no Y that are Z
 (e) None of the above
23. Given the above conditions, which of the following conditions add no new information?
 I. No Z are both X and Y
 II. Some X are neither Z nor Y
 III. Some Y are neither X nor Z
 (a) I only
 (b) II only
 (c) III only
 (d) I and II only
 (e) I and III only
24. Which of the following are inconsistent with the given information?
 (a) Some Z are not X
 (b) Some Y are not Z
 (c) No X are not Z
 (d) No Y are not Z
 (e) All of the above are inconsistent with the given information.
25. If no Z are Y and no X are Z, which of the following must be false?
 (a) Some Z are neither X nor Y
 (b) Some Y are neither X nor Z
 (c) Some X are neither Y nor Z
 (d) No Z are never X
 (e) No Z are never non-Y

Questions (26-29): Read the following and answer the questions that follow.

To apply for the scholarship, a student must see the Principal, fill out an application form and obtain an approval form either his Head of Deptt (HOD) or Chief Accounts Officer (CAO).

- Student must see Principal before filling out form in order to make sure it is filled out correctly.
- The Principal has office hours for students only on Thursday & Friday mornings, and Monday and Tuesday afternoons.

- The scholarship office, where the forms has to be deposited, is open only Monday and Tuesday mornings, Wednesday afternoons, and Friday mornings
 - HOD is in her office only on Monday & Tuesday mornings
 - CAO is in his office only on Tuesday & Friday mornings.
26. A student has already seen the principal and wishes to complete the rest of the application process in one day. If he must obtain his approval from HOD, when should he come to the college?
- Monday morning only
 - Tuesday morning only
 - Friday morning only
 - Either Monday or Tuesday morning
 - Either Monday, Tuesday or Friday morning
27. If a student completed her application process in one visit, which of the following must be false?
- I. She got her case approved by CAO
 - II. She got her case approved by HOD
 - III. She completed everything in the afternoon.
- I only
 - II only
 - III only
 - I and III only
 - II and III only.
28. If a student wanting to apply for scholarship has classes only on Tuesday and Thursday, and doesn't want to make an extra trip to the college, which of the following is true?
- The case approval must be obtained from HOD
 - The case approval must be obtained from CAO
 - The entire application process can be completed in one day
 - The entire application process can be completed within the same week in the college.
- I and II only
 - II and III only
 - I, II and III only
 - None of the statements are true
 - All of the statements are true

29. A student has already obtained case approval from HOD. He wishes to complete the process in only one more visit. When can he do this?
- Monday or Tuesday only
 - Monday, Tuesday, or Friday only
 - Friday morning only
 - Any morning except Wednesday
 - Any morning except Wednesday or Thursday.

Questions (30-35): Read the following and answer the question that follow.

Vandana and Ankit have six cats in their house. The cats roam around the house and lawn during the day time while Vandana & Ankit are gone to their offices. One day, when both came home they recorded the following facts about their cats.

- (1) Cat B is fatter than Cat G and drier than Cat E
- (2) Cat C is slimmer than Cat F and wetter than Cat G
- (3) Cat D is fatter than Cat B and wetter than Cat G
- (4) Cat E is slimmer than Cat G and drier than Cat C
- (5) Cat F is slimmer than Cat E and drier than Cat B
- (6) Cat G is fatter than Cat F and wetter than Cat B.

30. Which of the cats is (are) fatter than Cat E and drier than Cat G?

- D only
- F only
- B only
- Both F and C
- Both D and B

31. Which of the cats is (are) slimmer and wetter than E?

- G
- F
- D
- C
- B

32. Which of the following is (are) both fatter and wetter than G?

- F
- D
- C
- F and C
- E and D

33. Which of the following is the driest?

- C
- D
- E
- F
- G

34. Which of the following statements must be false?

- I. D is drier than C
 - II. F is wetter than D
 - III. D is three inches fatter than G
- I only
 - II only
 - III only
 - I and II only
 - II and III only

35. A new cat Y, is purchased, and if dominance in cats is determined by fatness, then what will Y's rank be if he is fatter than F and slimmer than B?
- Second from the top
 - Third from the top
 - Fourth from the top
 - Next to the bottom
 - Cannot be determined from the information given.

Keys and Explanations (Hints)

6. c	7. b	8. d	9. a	10. c	11. a
12. d	13. c	14. d	15. c	16. e	17. e
18. b	19. e	20. b	21. e	22. a	23. d
24. c	25. d	26. d	27. e	28. d	29. c
30. c	31. d	32. b	33. d	34. b	35. e

Hints:

Questions (6-10): O will not go next to T or E. The condition of not forming a common three-letter word cannot be usefully listed out. A simple alertness to the words formed is sufficient. English words are formed only left to right, however.

Help Question 7: O can't be in the middle, as it will make English words ROT or TOR, so (b). Rest all options are possible as follows:-

(a) is possible as MEH is possible;

(c) is possible with :

T	R	O
E	M	H

(d) is possible with :

M	H	E
T	R	O

(e) is possible with :

M	H	E
T	R	O

Help Question 8: The diagram will be

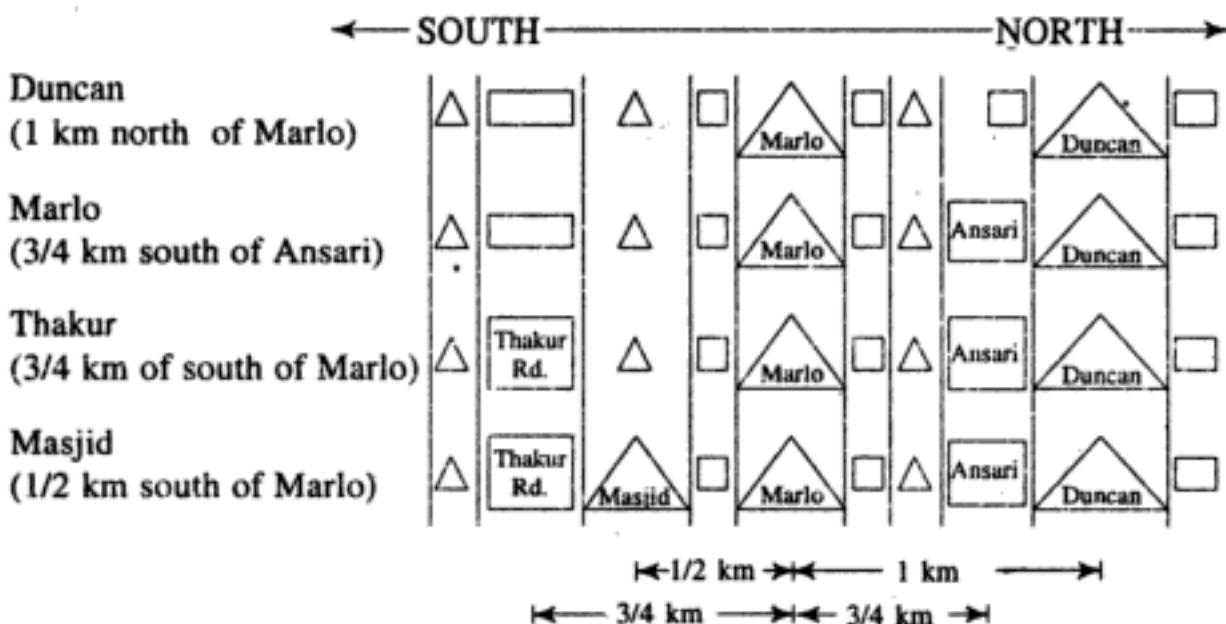
M	O	T
R	E	H

, so (a), (b) and (c) are true, while (d) is false.

However, (e) fails when (d) succeeds.

Hint:

Questions (11 to 15): The diagram is: (if Δ denotes Street and \square a Road then)



Help Question 13. Ansari Road is five steps of the ladder from Masjid Street, with each step being $1/4$ km, for a total distance of $1\frac{1}{4}$ km.

Hints:

Questions (16-20): The diagram will be:

<i>Science Block</i>	<i>Commerce Block</i>
(Two from each block)	

X

P

Y \leftarrow Not with \rightarrow L \leftarrow Not with \rightarrow M

Y \leftarrow Not with \rightarrow N

This diagram helps decide who can and can't be on the team with a particular other candidate.

Help Question 16. L's inclusion base Y and M, Y's omission requires the inclusion of X and Z to have two Science block candidates, leaving only (e) on the right answer.

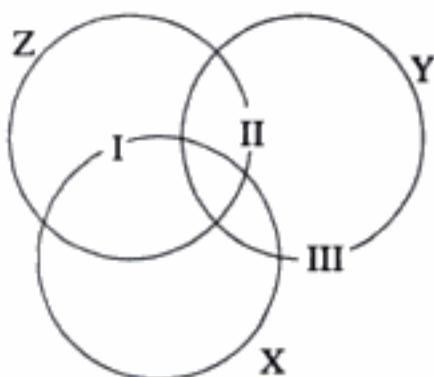
Help Question 18. Selection of Y and Z excludes L and N respectively, thus assuring the selection of P and M, therefore choice (b).

Help Question 19. The answer to Q 18 gives an example of M, P and Z being in the same team, thus falsifying statement (I) and (III). N, P, Y and X is a possible team which shows the error of II, hence, choice (e)

Hints:

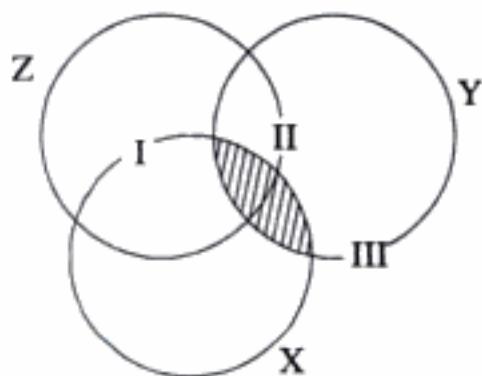
Questions (21-27): If we indicate the idea of "some" by putting the number of proposition with a question mark over the two areas of a Venn diagram, we will get following for proposition I, II and III.

Diagram I:

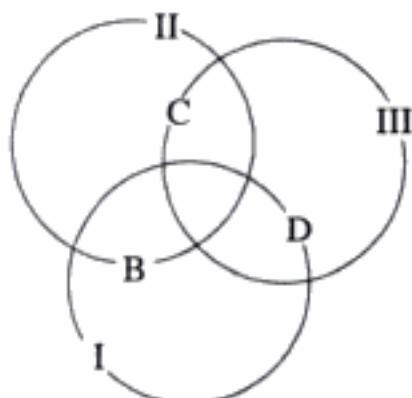


Adding the information from preposition IV, we get

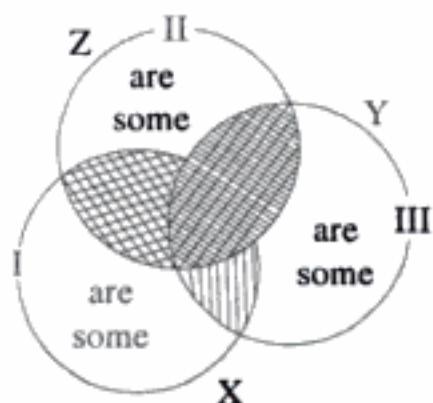
Diagram 2:



Help Question 21. The diagram will be:



Help Question 25. Coding in the additional information given in the diagram:



Hint:

Questions 26-29: In this question, a straight listing of the information on hours and days is all that is reqd.

	Monday	Tuesday	Wednesday	Thursday	Friday
Mornings	-Scholarship office -HOD	-Scholarship office -HOD -CAO		Principal	-Principal -Scholarship office -CAO
Evenings	Principal	Principal	Scholarship office		

Hint:

Questions (30-35)

Diagram 1: (Fat/Slim Idea)

← FATTER ————— SLIMMER —————→

B fatter than G

B

G

C slimmer than F (can't do now)

D fatter than B

D

B

G

E slimmer than G

D

B

G

E

F slimmer than E

D

B

G

E

F

C slimmer than F (can't do now)

G fatter than F

D

B

G

E

F

C

Diagram 2: (Drier/Wet Idea)

← DRIER ————— WETTER —————→

B drier than E		B	E	
C wetter than G	(can't do now)			
D wetter than G	(can't do now)			
E drier than C		B	E	C
C wetter than G	(can do now)	B	E	C
			G ←	
D wetter than G	(can do now)	B	E	C
		← G — D →		
F drier than B		F	B	E C
		← G — D →		
G wetter than B		F	B	E C
		← G — D →		

Help Question 35: The exact rank cannot be determined because the new cat Y's being slimmer than B and fatter than F leaves unclear relationship between Y and cats G and F.

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41. If $(A + B * C)$, then

- (a) A is niece of C
- (b) A is daughter of C
- (c) A is cousin of C
- (d) A is daughter-in-law of C
- (e) A is aunt of C

42. Introducing a man, a women said, "His wife is the only daughter of my father." How were the man and women related?

- (a) Brother
- (b) Father-in-law
- (c) Uncle
- (d) Husband
- (e) Cousin.

Questions (43-48): All the six family members A, B, C, D, E and F are staying together. B is the son of C, but C is not mother of B. A and C are a married couple. E is the brother of C. D is the daughter of A. F is the brother of B.

43. How many male members are there in the family?

- (a) 1
- (b) 3
- (c) 2
- (d) 4
- (e) 5

44. Who is the mother of B?

- (a) D
- (b) F
- (c) E
- (d) A
- (e) None

45. How many children does A has?

- (a) 1
- (b) 2
- (c) 3
- (d) 4
- (e) None

46. Who is the wife of E?

- (a) A
- (b) F
- (c) B
- (d) D
- (e) None

47. Which of the following is a pair of females?

- (a) AE
- (b) BD
- (c) DF
- (d) AD
- (e) None

48. How is E related to D?

- (a) Father
- (b) Brother
- (c) Uncle
- (d) Can't be determined
- (e) None

49. Ankit is walking in the market with a lady. The woman introduces him to a stranger saying, "his mother was the only daughter of my mother". How the boy is related to the lady.

- (a) Son
- (b) Daughter
- (c) Nephew
- (d) Niece
- (e) Can't be determined

50. R's son is cousin of son of S. If S has no brother, what is R to S?

- (a) Sister
- (b) Brother
- (c) Son
- (d) Mother
- (e) None

Answers & Hints

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 36. c | 37. d | 38. b | 39. a | 40. b | 41. a |
| 42. d | 43. d | 44. d | 45. c | 46. e | 47. d |
| 48. c | 49. a | 50. a | | | |

Hints:

Questions (36-38): We deduce the following from the information given:

- (1) $R \neq U$
- (2) $S \neq W$ and $P \neq W$
- (3) $R \neq T$ and $S \neq T$
- (4) $R \neq W$

Now, from (1), (3) and (4), we have $R = V$ from (2) and conclusion that $R = V$, we have $Q = W$. Now, from (3), and conclusion $R = V$ and $Q = V$, we have $S = U$ and, thus $P = T$.

For age, we have

- from (1), $V > U$
- from (2), $U > W$
- from (3), T is the youngest

Therefore, order of oldest to youngest is

- Females: $V \rightarrow U \rightarrow W \rightarrow T$;
- and for Males: $R \rightarrow S \rightarrow Q \rightarrow P$

Hints:

Questions (39-41)

Hint 4: $(A + B - C) \rightarrow [A \text{ is daughter of } B \text{ who is the husband of } C] \rightarrow C \text{ is A's mother}$

Hint 5: $(A * B + C) \rightarrow [A \text{ is brother of } B \text{ who is daughter of } C] \rightarrow A \text{ is son of } C$

Hint 6: $(A + B * C) \rightarrow [A \text{ is daughter of } B \text{ who is brother of } C] \rightarrow A \text{ is niece of } C$

Hint:

Questions (43-48)

1. There are four males E, C, B and F and 2 females A and D.
2. C is father of B
3. A and C are married to each other.
4. A has sons B and F and daughter D
5. E has no wife.

Sitting Arrangement

Questions (51-53): Read the following and answer the questions that follow.

- (1) A round table with eight chairs is set up for labour negotiations. There are two people representing management B and A, and three people representing the worker union S, G and T.
- (2) No member representing the same group may sit in adjacent seats
- (3) There is an empty seat between G and S
- (4) A is sitting between T and G
- (5) There are more than two seats between T and S
- (6) B is next to S

- 51.** Which of the preceding statement repeats information given within the other statements?
- (a) 2 (b) 3 (c) 4 (d) 5 (e) 6
- 52.** J, another member representing the workers' union joins the negotiations. No one moves from his seat and J does not sit next to another worker. It must be true that
- (a) J sits next to B
 (b) J sits between G and S
 (c) There is more than one seat vacant between G and S
 (d) There is more than one seat vacant between T and J
 (e) There is no place for J to sit under the given conditions.
- 53.** If still another person, M, were to join the negotiations, and all conditions were met, which must be true?
- (a) M must be representing the workers' union.
 (b) M must be representing the management
 (c) M must sit between T and J
 (d) M must sit between G and S
 (e) M must sit between J and B

Read the following and answer the questions that follow.

Questions (54-55): Parwez wants to place six rows of chairs using the colours Blue, Green, Purple, Orange, Red and Yellow in a huge hall. Because of the contrast of the colours, he decides to place the chairs in a certain order/arrangement.

- (1) Red and Purple are as far as possible
 (2) Orange chairs are three rows from the red
 (3) The yellows are somewhere between red row and orange row
 (4) The blues are four rows from the purple chairs
 (5) The green chairs are between orange and purple chairs.
- 54.** The order Parwez decided to put the chairs is :
- (a) Yellow/Blue/Red/Purple/Green/Orange
 (b) Red/Blue/Yellow/Orange/Green/Purple
 (c) Red/Blue/Orange/Yellow/Green/Purple
 (d) Red/Yellow/Blue/Orange/Green/Purple
 (e) Red/Yellow/Orange/Blue/Purple/Green
- 55.** Which of the following is/are necessary to determine the order of the rows?
- I. The red and purple chairs are as far apart as possible
 II. The green chairs are between orange and purple chairs
 III. The blue chairs are four rows from purple chair
- (a) I and II (b) II and III (c) I, II, III (d) II only (e) III only

Answers & Hints

51. d

52. a

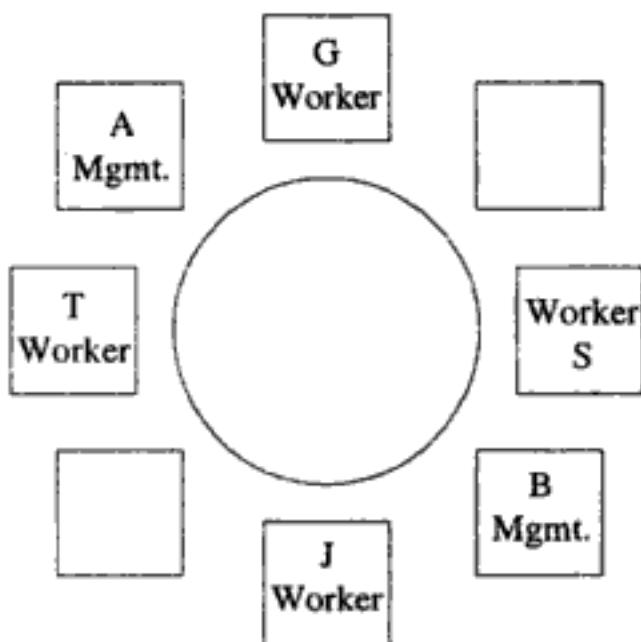
53. b

54. b

55. d

Hints:

Questions (51-53): The seating diagram representing the situation would look like this:



Help Question 53: After J sits besides B, there is one seat vacant between T (worker) and J (worker), and also between G (worker) and S (worker). M can have seat at any of these places, but since it is between two workers, M has to be a management person.

Hints:

Questions (54 to 55)

The situation can be put into diagram as follows:

Statement I	:	Red					Purple
Statement II	:	Red			Orange		Purple
Statement III	:	Red	Yellow?	Yellow?	Orange		Purple
Statement IV	:	Red	Blue	Yellow	Orange		Purple
Statement V	:	Red	Blue	Yellow	Orange	Green	Purple

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Solution: The denominators of both fractions are equal, since 462 is 231 times 2, making both denominators (231) (2) (8). The numerator of B is larger than A, as they both have a factor of 17, but (9) (42) is greater than (8) (45). Therefore, B is the greater fraction—a conclusion reached with no major computation at all.

Answer: (B) B is greater

2. Another important concept to remember is that the product of any number of factors will be zero if and only if one of the factors is 0.

Illustration	A	B
If $x > 0, y > 0, z = 0$	$3z(2x + 5y)$	$3x(2z + 5y)$

Solution: If $z = 0$, then $3z = 0$ and the product of the factors in Column A is 0. In Column B, the product will be $(3x)(5y)$, which is positive. Therefore, B is greater.

Answer: (B) B is greater.

Illustration	A	B
If $x < 0, y > 0, z = 0$	$3z(2x + 5y)$	$3x(2z + 5y)$

Solution: Again, the product of the factors in Column A will be 0, since $3z = 0$. In Column B, $3x$ will be negative, $5y$ will be positive, so their product will be a negative number. This time, A is greater.

Answer: (A) A is greater.)

3. When making comparisons in this type of question, be sure to consider all possibilities.

Illustration	A	B
If $x^2 = 81$ and $y^2 = 64$	x	y

Solution: Remember that a quadratic equation has two roots. If $x^2 = 81$, x may be 9 or -9. If $y^2 = 64$, y may be 8 or -8. If x is 9 while y is 8, x will be greater. But if x is -9 while y is -8, y will be greater. Therefore, the correct answer is (D), not enough information. **Answer:** (D) not enough information

Illustration	A	B
	x^3	x^2

Solution: If x is greater than 1, A is greater. If x is a fraction between 0 and 1, or any negative number, B is greater. If x is 0 or 1, both A and B are equal. Therefore, the correct answer is (D). **Answer:** (D) not enough information

Illustration	A	B
$1 < x < 3; 1 < y < 99$, then	x	y

Solution: If x and y are both 2, A and B are equal. If x is 2¹⁷ and y is 2, A is greater. If x is 2 and y is 17, B is greater. Again, the correct answer is (D). **Answer:** (D) not enough information.

In each of the above examples, it is important to consider all possible values of the variable before jumping to a conclusion.

Triangle relationships in geometry also lend themselves to this type of question.

Illustration		A	B
	1.	Angle A	Angle C
	2.	Angle A	Angle B
	3.	$a + b$	c

Solution:

- If two sides of a triangle are unequal, the angles opposite are unequal, with the greater angle opposite the greater side. Therefore, the correct answer is (B).
- Since we do not know whether a or b is greater, we can not tell which angle is greater. The correct answer is (D).
- The sum of any two sides of a triangle must always be greater than the third. Therefore, the correct answer is (A).

Because these questions cover all work previously reviewed, and it is important that you have sufficient practice with them, 50 practice exercises follow.

Practice Questions

Compare the two quantities in Column A and Column B and determine whether:

- (A) the quantity is greater in Column A
- (B) the quantity is greater in Column B
- (C) both quantities are equal
- (D) no comparison can be made with the information given after working out the problem in the space provided.

Write your answer next to the question number.

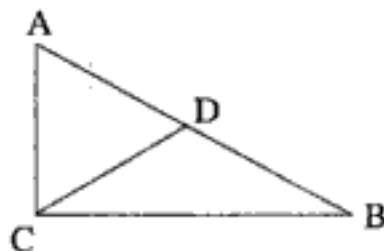
Notes:

- Information concerning one or both of the compared quantities will be centered between the two columns when given.
- Symbols that appear in both columns represent the same thing in Column A as in Column B.
- Letters such as x^n , and k are symbols for real numbers.

	COLUMN A	COLUMN B	
1.	$\frac{2}{3} + 2$	30%	
2.	$\frac{4}{17}$	$\frac{2}{15}$	
3.	$3\frac{1}{2}$ expressed as a percent	3.5%	
4.	$\sqrt{25.1}$	5.1	
5.	Cost per egg if 2 dozen cost \$ 1.90	9¢	
6.	$(2 + .2)(2 - .2) \left(\frac{1}{5}\right)$	(.2) (1.8) (2.2)	
7.	$\sqrt{\frac{1}{4} + \frac{1}{9}}$	$\frac{1}{2} + \frac{1}{3}$	
8.	$(m + n)^2$	$m = 3, n = -2$	$(m - n)^2$
9.	The distance from A to B is 3 miles. The distance from B to C is 4 miles. 5 miles	The distance from A to B is 3 miles. The distance from B to C is 4 miles. The distance from A to C.	
10.	x^5	x^2	
11.	Diameter of the circle	The area of a circle is 16π 16	
12.	The sum of the five numbers	The average of 5 numbers is 20. 110	
13.	$\frac{1}{5}$	$\frac{1}{.05}$	
14.	.1π	$\sqrt{.81}$	
15.	Area of a square having perimeter 32	Area of circle having radius 5	

COLUMN A		COLUMN B	
16.	8	$y^2 - 1 = 8$	y
17.	a	$a^2 = 49$	7
18.	$\frac{1}{a}$	$a > b > 0$	$\frac{1}{b}$
19.	a	$(2)(2)(a) = (3)(3)(3)$	2
20.	$\frac{1}{x^4}$	$-4 < x < -2$	$\frac{1}{x^5}$
21.	(16)(351)(10)		(15)(351)(11)
22.	a	$a^2 > 0$	0
23.	A single discount of 10%.	Two successive discounts of 5% and 5%.	
24.	50%		$\frac{1}{.02}$
25.	Time elapsed from 11:50 P.M. to 12:02 A.M.		$\frac{1}{3}$ hour

The diagram below applies to Problems 26-29.

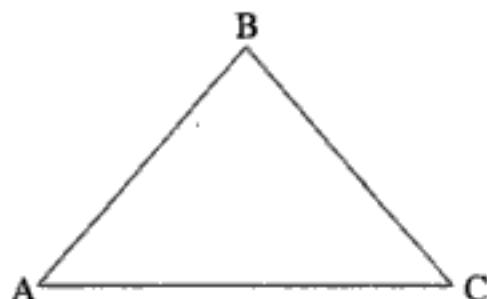


$$AC = CD = AD \quad AC \perp CB$$

26.	CD	DB
27.	$\angle A$	$\angle B$
28.	CD	CB
29.	AD	DB

COLUMN A

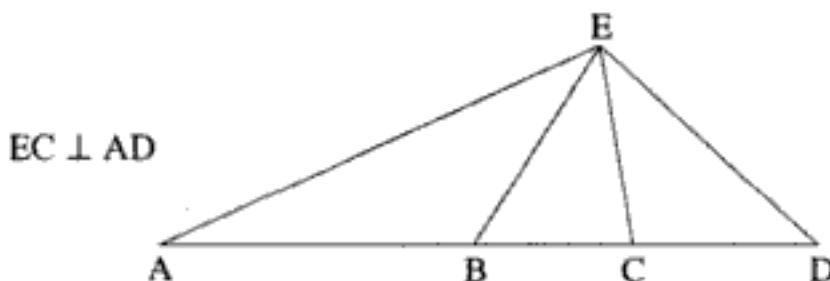
COLUMN B

Questions 30-31 refer to the figure below.

$$AB = BC \quad \angle B < \angle A$$

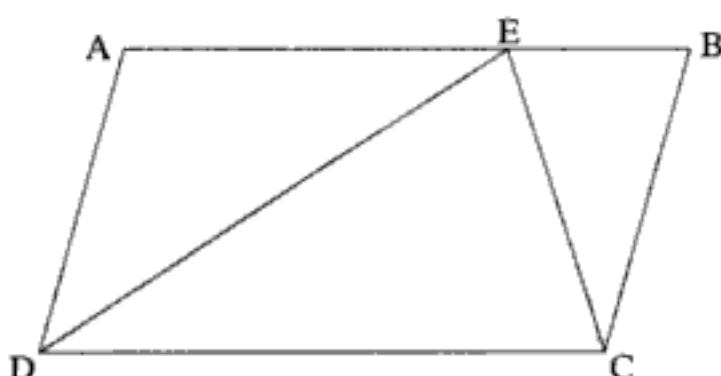
30. $\angle B$
31. AB

- $\angle C$
 AC

Questions 32-34 refer to the figure below.

32. EC
33. $\angle EBA$
34. $\angle A$

- ED
 $\angle ECD$
 $\angle ECB$

Questions 35-37 refer to the figure below.

ABCD is a parallelogram.
E is any point on AB.

35. Twice the area of
triangle DEC
36. $\angle A$
37. AD

- Area of parallelogram
 $\angle B$
 DC

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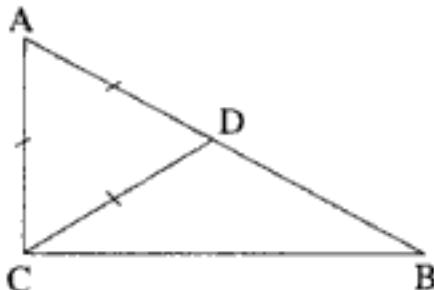
23. (A) Consider a marked price of \$100. A single discount of 10% gives \$10 off. An initial discount of 5% gives \$5 off, making the new price \$95. The second 5% discount is 5% of only \$95 or \$4.75, making the total discount only \$5 + \$4.75 or \$9.75.

24. (B) $50\% = \frac{1}{2}$

$$\frac{1}{.02} = \frac{100}{2} = 50$$

25. (B) From 11:50 P.M. to 12:02 A.M. is 12 minutes. $\frac{1}{3}$ of an hour is 20 minutes.

26. (C)



Triangle ACD is equilateral, making each angle 60° . Angle DCB is then 30° , and angle CDB is 120° , leaving 30° for angle B. Therefore, triangle DCB is isosceles.

27. (A) Angle A is 60° , angle B is 30° .
28. (B) In triangle CDB, CD is opposite a 30° angle, while CB is opposite 120° .
29. (C) Both of these segments are equal to CD.
30. (B) Since $\angle A$ and $\angle C$ must be equal, because the sides opposite are congruent, $\angle B$ is also less than $\angle C$.
31. (A) Since $\angle B$ is less than $\angle C$, AC will be less than AB.
32. (B) The shortest distance from a point to a line is the perpendicular.
33. (A) Angle EBA is an exterior angle of triangle EBC and is therefore greater than angle ECB. Since angle ECD is also a right angle, angle EBA will be greater than angle ECD.
34. (B) Triangle ECA has a right angle. Since there will be 90° left to divide between the two remaining angles, angle A must be less than 90° .
35. (C) The altitude of triangle EDC is equal to the altitude of the parallelogram. Both the triangle and the parallelogram have the same base. Since the area of a triangle is $\frac{1}{2}bh$ and the area of a parallelogram is bh , these quantities are equal.

36. (D) There is no way to tell which is greater.
37. (D) There is no way to tell which is greater.
38. (B) Area of outer circle = $\pi r^2 = 100 \pi$
 Area of inner circle = 25π
 Shaded portion is outer circle minus inner circle, or 75π .
39. (A) Area of inner circle = $\pi r^2 = 25\pi$ $25(3.14)$ is more than 75.
40. (C) Circumference = πd
 Circumference of outer circle = $\pi(20)$
 Circumference of inner circle = $\pi(10)$
 $50\% = \frac{1}{2}; \frac{1}{2}$ of outer circumference = 10π
41. (A) 105% of 200 is more than 200.
 $50\% \text{ or } \frac{1}{2} \text{ of } 400 \text{ is } 200.$
42. (C) $35\% = .35$
 $\frac{0.7}{2} = .35$
43. (D) If $6x = 2z$, then $3x = z$, or $x = \frac{1}{3}z$. If either x or z is zero, both quantities are equal; if both are positive, z is larger. If both are negative, x is larger.
44. (A) $a > b$
 $\frac{a > c}{2a > b + c}$
45. (B) If $\frac{1}{x} > 1$, we multiply each side by x and have $1 > x$. There should be no concern about reversing the inequality, as x must be positive if $\frac{1}{x} > 1$.
46. (B) If $\frac{1}{x}$ is to be negative, x must be negative, since a positive number divided by a negative number gives a negative quotient. 0 is larger than any negative number.

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3. Minor Factors,
4. Major Assumptions, and
5. Unimportant Issues.

After you have finished, answer the questions that follow. Allow yourself 12 minutes to complete the entire exercise. You may consult the passage for assistance.

Sample Passage

Early in 1953, the soft drink world began to watch an interesting experiment: the introduction of soft drinks in cans. Grocery outlets up to that time had enjoyed about one-half of all sales, but it was felt that if the new package was successful, local bottling plants might give way to great central plants, possibly operated by companies with established names in the grocery fields, with shipments being made in carload lots. Local bottlers faced a great decision. If the change were to prove permanent, they should perhaps hasten to add can-filling machines lest they lose their market. Coca-Cola, Canada Dry, White Rock, and many other bottlers experimented with the new plan. An eastern chain put out privately branded cans.

A basic limitation was the cost factor of about three cents per can, whereas bottle cost was but a fraction of a cent, since a bottle averaged about twenty-four round trips. It was known, however, that at that time about one third of all beer sales were made in cans and, furthermore, that other beverages had paved the way for consumer acceptance of a canned product. Beer prices were normally from three to four times those of soft drinks.

Many leaders in the industry felt that it might well be that consumer advertising emphasizing the convenience of using a non-returnable package might offset both habit and the extra cost to the consumer. One of the principal bottling companies undertook a large-scale market research project to find useful guides to future action.

Sample Data Evaluation Questions

Directions: The questions that follow relate to the preceding passage. Evaluate, in terms of the passage, each of the items given. Then select your answer from one of the following classifications and blacken the corresponding space on the answer sheet.

- (A) A MAJOR OBJECTIVE in making the decision: one of the goals sought by the decision-maker.
- (B) A MAJOR FACTOR in making the decision: an aspect of the problem, specifically mentioned in the passage, that fundamentally affects and/or determines the decision.
- (C) A MINOR FACTOR in making the decision: a less important element bearing on or affecting a Major Factor, rather than a Major Objective, directly.

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way for consumer acceptance of a canned product. Beer prices normally were from three or four times those of soft drinks.

Many leaders in the industry felt that it might well be that consumer advertising emphasizing the convenience of using a non-returnable package might offset both habit and the extra cost to the consumer. One of the principal bottling companies undertook a rather large-scale market research project to find useful guides to future action.

Answers to Data Evaluation Questions

1. (A) 2. (B) 3. (B) 4. (C) 5. (E) 6. (D)

Analysis

1. (A) The introduction of soft drinks in cans is certainly the MAJOR OBJECTIVE here, since it is the ultimate goal toward which the executives were working.
2. (B) The market research project would gather information allowing management to make a decision; without such information, presumably, no decision could be reached. Therefore, the results of the project are a MAJOR FACTOR influencing the decision.
3. (B) The cost of canned soft drinks is a MAJOR FACTOR in making the decision because it is crucial to consumer acceptance. If the soft drinks are priced too high, consumers may not be willing to purchase them.
4. (C) Because cans may only be used once, their cost per use is higher than that of bottles. Since this factor has a peripheral effect on a major factor—namely, overall costs—it constitutes a MINOR FACTOR.
5. (E) The size of the beer market is of minimal importance in the decision as to whether soft drinks in cans will prove a success. Therefore, the only possible answer to this question is (E), UNIMPORTANT ISSUE.
6. (D) The executives alluded to in the passage merely *suspect* that advertising will be capable of effecting the desired attitude change. No facts are given to support this belief. Thus, this item is a MAJOR ASSUMPTION.

Answer to Data Application Question

7. (D) II and III only.

Analysis

The correct answer is (D) because the passage states that among the major uncertainties as to whether to offer canned soft drinks were their high cost and the purchasing habits of consumers, i.e., whether they would prefer canned soft drinks and be willing to pay a premium price for them. Alternative (A), I only, is factually incorrect, since no mention is made that the bottler in question desires to "corner the market".

PRACTICE EXERCISE

Data Evaluation Questions

Directions: The questions that follow relate to the preceding passage. Evaluate, in terms of the passage, each of the items given. Then select your answer from one of the following classifications and blacken the corresponding space on the answer sheet.

- (A) A MAJOR OBJECTIVE in making the decision: one of the goals sought by the decision-maker
- (B) A MAJOR FACTOR in making the decision: an aspect of the problem, specifically mentioned in the passage, that fundamentally affects and/or determines the decision
- (C) A MINOR FACTOR in making the decision: a less important element bearing on or affecting a Major Factor, rather than a Major Objective, directly
- (D) A MAJOR ASSUMPTION in making the decision: a projection or supposition arrived at by the decision-maker before considering the factors and alternatives
- (E) AN UNIMPORTANT ISSUE in making the decision: an item lacking significant impact on, or relationship to, the decision

Data Application Questions

Directions: Answer each of the following questions using information contained in the passage.

Passage 1

Mrs Vandana, a building contractor by profession, met with an old friend, Mrs Rupa, a marketing consultant. Mrs Vandana was excited about a business opportunity and wanted to obtain Rupa's evaluation of its prospects. Sleepmat, a small company producing foam rubber mattresses, was in financial trouble, and its owners were anxious to sell it. The company had been established some twenty years ago, but its market share had steadily declined over the last five years. Since Mrs Vandana had no previous experience in the mattress business, she requested her friend to find out what she could about the company.

Mrs Rupa first analyzed the company's resources. Its best resource was its product and brand name. Foam rubber mattresses are made of imported latex and are extremely firm, unlike synthetic rubber mattresses made of polyurethane. However, synthetics are much cheaper than foam rubber mattresses. Latex mattresses are known for their orthopaedic and anti-allergic qualities, among others. The Sleepmat brand name had very nearly become a generic term for all types of rubber mattresses. Sleepmat, however, was the only latex mattress produced locally.

Apart from a superior product, the company had few resources. Its equipment, while satisfactory, was old and had been fully depreciated. It operated in leased

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young adults about the important attributes found in its products. A major question that needed an immediate answer was: "To what extent are people aware of Sleepmat mattresses and their attributes?" Other question involved the attitudes of people toward foam rubber mattresses in general and how these attitudes compared with those toward spring mattresses. Mrs Rupa ordered a market research survey to obtain answers to her questions. In brief, the study revealed that a large segment of the population over twenty-five years of age was aware of Sleepmat mattresses and had favourable attitudes toward its attributes. About three-quarters of these people expressed a preference for foam rubber mattresses for their children (in comparison of other mattresses for their own use). Awareness among younger segments of the population of the attributes of foam rubber mattresses in general, and of Sleepmat in particular, was very low. Few young people expressed an intention to buy foam rubber mattresses.

On the basis of the preliminary research results, Vandana was optimistic that she could turn the company around. In support of her belief, she cited the 'recognition' of the company among a significant portion of the population, and the fact that they would buy a Sleepmat for their children. She believed that once retailers became aware that a new management had taken over the company, they would be willing to stock the product. Vandana was aware that the research findings were not always in agreement with her conclusions. However, the finding that young people were relatively unaware of Sleepmat did not seem to worry her. She felt that a well-designed advertising program would convince many people to buy a foam rubber mattress, rather than any competing type. Moreover, the introduction of a new management team would instil confidence among Sleepmat's bankers. Credit lines would be increased, thereby improving the company's financial position. However, before making a final decision as to whether to purchase Sleepmat, Mrs. Vandana waited for Mrs. Rupa's final report and recommendation.

Data Evaluation Questions

1. Public awareness of the high quality of Sleepmat mattresses
2. Joe Ashwani's marketing ability
3. The anti-allergic qualities of Sleepmat mattresses
4. Attitude of older consumers towards Sleepmat mattresses
5. Willingness of retailers to stock Sleepmat products in the future
6. Need to import latex rubber
7. Sleepmat's present market share
8. Mrs Rupa's recommendations
9. Sleepmat's present market share
10. Plausibility of changing consumer attitudes through advertising
11. Orthopaedic qualities of Sleepmat mattresses
12. Use of polyurethane in the production of synthetic mattresses
13. Khosla's intention to leave Sleepmat
14. Age of Sleepmat's manufacturing equipment

15. Likelihood that credit lines could be increased
 16. Ashwani's explanations for loss of market share

Data Application Questions

17. Rupa found that Sleepmat's best resource was its
I. manufacturing equipment
II. labour force
III. brand name
(A) I only (B) III only (C) I and II only
(D) II and III only (E) I, II, and III

18. As compared to synthetic mattresses, foam rubber mattresses are
I. more likely to cause an allergic reaction
II. relatively inexpensive
III. firmer to sleep on
(A) I only (B) III only (C) I and II only
(D) II and III only (E) I, II, and III

19. Mr Ashwani postponed his retirement because
I. his sales manager threatened to leave
II. he could not pay the company's debts
III. she had not trained a successor
(A) I only (B) III only (C) I and II only
(D) II and III only (E) I, II, and III

20. Sleepmat had completely ceased to advertise by means of
I. television
II. radio
III. newspapers
(A) I only (B) III only (C) I and II only
(D) II and III only (E) I, II, and III

Passage 2

Mr Ankush Verma is considering whether he should resign from his present job and start his own business. Working as a researcher in a large chemical company, Mr Ankush Verma has obtained knowledge of a solid oxygen supply system, used in the C-5A Galaxy bombers, by which oxygen is released from a cartridge of sodium chlorate. Ankush Verma has learned that oxygen is used as a reliever for persons suffering from heat and respiratory diseases. Up to the present time, instruments using liquid oxygen have been used for this purpose but these have the disadvantage of being bulky, heavy, and relatively dangerous. It has occurred to Ankush Verma that the solid oxygen system can readily be modified to make it

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product based on the volume of his expected sales for the first two years and then applied a 30 per cent profit margin. The resultant prices were as follows:

Initial Total System: Rs 6000.00 each Replacement Cartridge Rs 350.00 each

These prices will drastically undersell those products which are based on liquid oxygen. Of course, financing has been an important consideration in determining the feasibility of the venture. Since Ankush Verma is not independently wealthy, he has sought external financing. It occurred to him that the Small Business Administration of the central government was a good source of advice and therefore he contacted them. As a result of his talks with people at this agency, Ankush Verma has learned that he is eligible for a major loan to cover the capitalization costs of the proposed company, provided he establishes his factory in one of the six less-developed industrial regions in the National Capital Region (Delhi). The loan carries an interest rate which is much lower than that on funds he is able to obtain elsewhere. Further, one of the designated areas for establishment of the factory is the New Okhla Distt. Area. Proceeding with this information, Ankush Verma obtained data on the cost of factory space in places in the Okhla area, which were within easy reach of New Delhi and other target market areas. He finally settled on Surfabad, Okhla Distt.

Thus Ankush Verma has all the necessary information to make the ultimate decision—whether to go ahead or not. He realizes that his present position offers him security during his lifetime although it offers limited prospects. Certainly the venture which he is considering offers the possibility of high profit as well as the satisfaction of managing his own company and being socially successful. On the other hand, there are many risks involved and if the company should fail, a man of his age may find it difficult to get suitable employment immediately.

Data Evaluation Questions

21. Advantages of the solid oxygen system
22. Determination of a price for replacement cartridges
23. The public's knowledge of, and confidence in, the product
24. The underselling of competitive products
25. Obtaining a patent for the design
26. Initial favourable response from doctors
27. The use of the oxygen supply system in the C-5A Galaxy bomber
28. Management of the venture by Ankush Verma himself
29. Growth of the market at an annual rate of 5 per cent
30. Difficulty in obtaining suitable employment in such a case
31. Official medical approval of the product
32. Eligibility for a major loan
33. Security afforded by his present position
34. The plan to locate the plant in Massachusetts

- 35. Becoming socially successful
 - 36. The period required by the product to reach its maturity stage
 - 37. The low interest rate of the loan

Data Application Questions

38. Which of the following characteristic(s) applies (apply) to solid oxygen supply system?

 - I. Easy to carry
 - II. Relatively dangerous
 - III. Expensive

(A) I only (B) II only (C) I and II only
(D) I and III only (E) I, II, and III

39. In which of the following areas does Mr Ankush Verma wish to enter initially?

 - I. The Far West side
 - II. The North side
 - III. The Southwest side

(A) I only (B) II only (C) I and II only
(D) I and III only (E) I, II, and III

40. Which of the following are factors in Ankush Verma's arriving at a decision?

 - I. His product has official medical approval.
 - II. His product will be recommended by 20 percent of the doctors.
 - III. The market is larger on the East coast than on the West coast.

(A) I only (B) II only (C) I and II only
(D) I and III only (E) I, II and III

41. The price of the new product is based on

 - I. The full cost
 - II. The expected volume of sales
 - III. The existing market price

(A) I only (B) II only (C) I and II only
(D) I and III only (E) I, II, and III

42. The location of the plant has been determined by

 - I. Financial considerations
 - II. Production costs
 - III. Transportation costs

(A) I only (B) II only (C) I and II only
(D) I and III only (E) I, II, and III

43. First-year sales have been forecast at
 (A) 2,000–5,000 units (B) 8,000–12,000 units
 (C) 25,000–30,000 units (D) 55,000–60,000 units
 (E) 60,000–65,000 units
44. The price arrived at for the initial total system including replacement cartridges is
 (A) Rs 350.00 (B) Rs 5,650.00 (C) Rs 6,000.00
 (D) 6,350.00 (E) \$200.00
45. What percentage of the total market does the West side represent?
 (A) 2 to 5 per cent (B) 5 to 9 per cent (C) 13 to 16 per cent
 (D) 25 to 30 per cent (E) 50 to 60 per cent

Passage 3

The Coromandal India Ltd. of Chennai has, for several years, been exporting refrigeration units for commercial and domestic use to Tabago Island, an under-developed country in South America whose growth in recent years has been quite rapid. Continuation of present growth trends would indicate a substantially increased demand for both luxury consumer goods and convenience foods. The company's policy is to expand sales in Tabago Island as quickly as possible, hoping to limit the inroads made by competitors on this lucrative market.

Manufacture of all units is presently performed at the main factory in Chennai. Goods exported to Tabago Island are taken, at considerable cost, by rail and boat. Breakage and corrosion during the trip are a further, though less important, source of costs. The Chennai factory is of limited size, however, and the growth of export markets taken with the steady increase in demand within the United States has led to an imminent shortage of capacity. If both the home and overseas markets are to be supplied adequately, a new investment in buildings and machinery is called for; the company's presently highly solvent position and high rating on the financial markets mean capital should be readily available for an investment project.

Careful consideration was given to a variety of potential locations for the new works, but eventually the choice narrowed to either expanding the present Chennai works or building a new factory in Tabago Island. Advice from the sales team was that the entry of competition in the Tabago Island market could best be restricted by pricing the models as cheaply as possible. The President of the Board was in basic agreement with this advice but felt strongly that a continued goal should be the maintenance of the company's reputation for quality merchandise. Only with a reliable "name", he argued, could long-run market penetration be maximized.

The primary sources of cost saving (see Table 1) as a result of locating in Tabago Island were comprised of the elimination of transport costs and the avoidance of a tariff imposed by the government on the import of all consumer goods. This measure was designed to encourage investment within the country.

Table 1: Cost of Standard Household Unit Sold in Tabago Island

Cost	Manufactured in Chennai	Manufactured in Tabago Island
Materials	Rs 5,000	Rs 5,000
Labour	Rs 12,000	Rs 13,400
Transport	Rs 5,100	Rs 400
Damage in Transit (average)	Rs 900	Rs 200
Basic Cost	Rs 23,000	Rs 19,000
Tariff(20%)	Rs 4,600	Rs 0
Wholesale Cost	Rs 27,600	Rs 19,000
Dealer Markup (10%)	Rs 2,800	Rs 1,900
Total Retail Cost	Rs 30,400	Rs 20,900

Initially, it was thought that the availability of cheap labour in Tabago Island would be a major source of savings, but although unskilled labour is available at less than half the American wage, the necessity of importing supervisory and skilled staff from the United States, coupled with the lower productivity of the local workers, more than offset any gain.

The maintenance of quality is important to the company and there was doubt as to the ability of Tabago Island workers to provide reliable workmanship. Eventually, it was decided that with close supervision and extensive quality control the required standards could be met.

All raw materials used are available in Tabago Island at close to the Indian prices. Cost of construction of buildings would be slightly lower than in Chennai but the higher cost of installing machinery meant that total investment cost would be virtually identical.

A further important issue was a financial matter relating to the instability of the cruzeiro, the unit of currency in Tabago Island. A devaluation seems likely in the near future and that would increase the basic cost of all imports (before tariff) and a devaluation of more than 10 per cent would be fatal to any sales drive, predicated on the import of goods.

In the light of the foregoing considerations and in view of the impetus that a new overseas base would give to the long-term worldwide sales drive, seen by the President as the logical future of the company, it was decided to build the new factory in Tabago Island.

Data Evaluation Questions

Choose the appropriate letter (A or B or C or D or E) for these phrases in accordance with the given directions.

- 46.** Growth of demand for luxury consumer goods

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- (D) about 50% lower than in the India
 (E) subsidized by the government
- 66.** Pricing as low as possible is desired in order to
 (A) benefit the Tabago Island consumer
 (B) avoid the tariff totally
 (C) fight inflation in India
 (D) restrict the entry of competitors in Tabago Island
 (E) put pressure on workers to increase their productivity
- 67.** The effect of a devaluation of the cruzeiro would be to increase
 (A) the price of a refrigerator made and sold in India
 (B) the price of a refrigerator made and sold in Tabago Island
 (C) the price of a refrigerator made in Tabago Island and sold in India
 (D) the price of a refrigerator made in India and sold in Tabago Island
 (E) transport costs within India.
- 68.** Capital is available for the project because
 (A) bankruptcy would follow if the investment is not made
 (B) the factory in Chennai is to be closed and sold
 (C) of the company's highly solvent position
 (D) of a grant from the Tabago Island government to encourage investment
 (E) the cost savings due to elimination of transit damage would be so significant
- 69.** Space is short in the Chennai factory because of
 (A) the rapid rise of domestic demand
 (B) the growth of export markets
 (C) a steady rise of domestic demand
 (D) both A and B
 (E) both B and C
- 70.** For a standard household unit sold in Tabago Island, which manufacturing cost is greater in Tabago Island than in Chennai?
 (A) Materials cost (B) Transport cost (C) Basic cost
 (D) Labour cost (E) Wholesale cost

Answer keys

Passage 1

Data Evaluation

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (B) | 2. (E) | 3. (C) | 4. (C) | 5. (D) | 6. (E) | 7. (B) |
| 8. (B) | 9. (E) | 10. (D) | 11. (C) | 12. (E) | 13. (B) | 14. (E) |
| 15. (E) | 16. (B) | | | | | |

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III. Where Choice C is the Answer

Example: Is $x + y$ positive?

- (1) $x^3 = 20y$
- (2) $y^3 = -129$

Look at statement (I): This does not tell us anything about $x + y$. Now look at statement (2). This tells us that y is negative (since y^3 is negative). Unfortunately, this does not answer our question. However, if y is negative (from statement (2)), then according to statement (1), x must be negative. The reason for this is that x^3 is now negative. Therefore, by using statements (1) and (2) we have shown that both x and y are negative. Therefore, $x + y$ must be negative and this answers our question. Thus, Choice C is correct.

IV. Where Choice D is the Answer

Example: Which is greater, 37 or y^2 ?

- (1) $y > \sqrt{38}$
- (2) $y = 7$

Look at statement (I): $y > \sqrt{38}$. This implies that $y^2 > \sqrt{38} \times \sqrt{38}$.

$$\sqrt{38} \times \sqrt{38} = 38$$

So statement (1) implies that $y^2 > 38$. Thus y^2 is surely greater than 37 and we have answered the question. Now look at statement (2): If $y = 7$, then $y^2 = 49$ and certainly $y^2 = 49 > 37$. Thus statement (2) answers our question. Since both statements (1) and (2) answer our question by themselves, Choice D is correct.

V. Where Choice E is the Answer

Example: What is the perimeter of triangle ABC?

- (1) Triangle ABC is a right triangle.
- (2) The area of triangle ABC = 30.

Statement (1) alone certainly does not answer our question because the fact that a triangle is a right triangle (contains a right angle) does not tell us anything about the perimeter of the triangle. Statement (2) tells us that the area is 30. Statement (2) alone will not tell us what the perimeter of the triangle is.

Now suppose we looked at statements (1) and (2) together. Call the sides of the triangle x , y , and z , where z is the hypotenuse (longest side opposite the 90° angle).

The area of the right triangle is the product of the shorter sides ($1/2$ base \times height) so the area of the triangle is $1/2xy = 30$.

The perimeter of the right triangle is however $x + y + z$.

Therefore, just because we know what the value of $1/2xy$ is, we cannot determine the value of $x + y + z$.

Accordingly, Choice E is correct. We, therefore, need additional information to answer our question.

At this point, you are urged to use the foregoing "Tips for Solving Data Sufficiency Problems" in the solution of such problems. Following are "Practice Problems in Data Sufficiency." These questions are much like the Data Sufficiency problems that you will encounter in the actual Test.

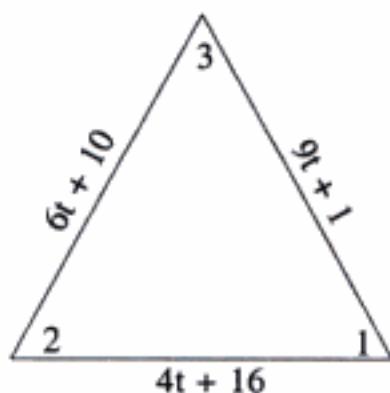
PRACTICE EXERCISE

Directions: Each of the questions below is followed by two statements, labelled (1) and (2), in which certain data are given. In these questions you do not actually have to compute an answer, but rather you have to decide whether the data given in the statements are sufficient for answering the question. Using the data given in the statements plus your knowledge of mathematics and everyday facts (such as the number of days in July), you are to blacken the box on the answer sheet under

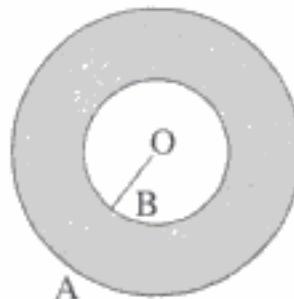
- (A) if statement (1) ALONE is sufficient but statement (2) alone is not sufficient to answer the question asked,
- (B) if statement (2) ALONE is sufficient but statement (1) alone is not sufficient to answer the question asked,
- (C) if BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient.
- (D) if EACH statement is sufficient by itself to answer the question asked,
- (E) if statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked and additional data specific to the problem are needed.



1. In a given parallelogram, what is the measure of Angle *b*?
 - (1) Angle *d* = 80° .
 - (2) The sum of Angles *a*, *c*, and *d* is 280° .
2. If we assume a constant reading rate, can Joel finish the book in 6 hours?
 - (1) Joel reads 54 pages an hour.
 - (2) In 2 hours, he reads half the book.
3. How many hits must a batter get to raise his batting average to 300?
 - (1) He has batted 56 times.
 - (2) He has 14 hits now.



4. What is the perimeter of the triangle?
- Angle 1 = Angle 2 = Angle 3
 - Angle 2 = 60° .
5. How long will it take Howie to finish the job alone?
- Howie and Donald together finish the job in 6 hours.
 - Donald would need 10 hours to complete the job alone.



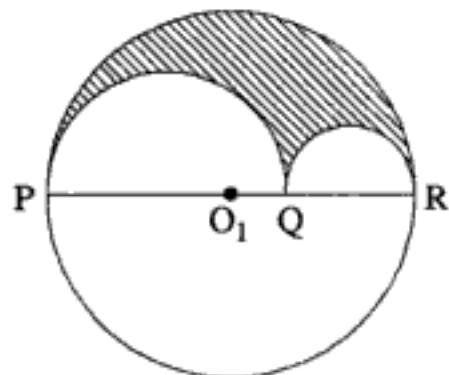
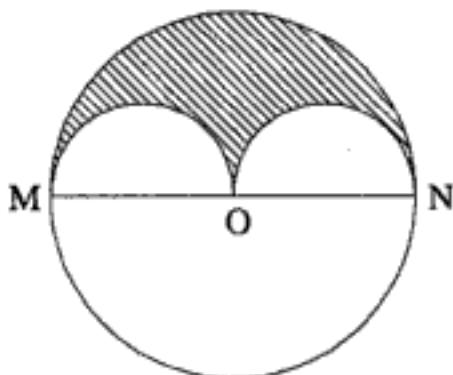
6. What is the ratio of the shaded area to the unshaded area of the concentric circles?
- $OA = 3OB$
 - $AB = 2OB$
7. How far is Birenburg from Ferenci?
- Ferenci is 37 miles from Pebbley Corners.
 - Birenburg is 56 miles from Pebbley Corners.
8. Is C an odd number?
- The reciprocal of C is greater than .1 and less than .12.
 - $2C$ is an even number.
9. In triangle MNO, does Angle MNO equal Angle MON?
- $ON = MN$
 - Angle OMN = 73° .
10. Is the average age of the men less than 32?
- One-third of the men are younger than 25.
 - One-half of the men are between 25 and 30 years old.

11. What is the length of the square's diagonal?

- (1) The perimeter of the square is $16\sqrt{2}$.
- (2) The area of the square is 32.

12. If deebis, dlowds, and flestrungs are units of measurement, is a deebi greater than a dlowd?

- (1) 5 deebis = 1 dlowd.
- (2) 1 dlowd = 7 flestrungs.



13. If both circles O and O₁ have radii of 6, what is the ratio of the shaded area of semicircle O to the shaded area of semicircle O₁?

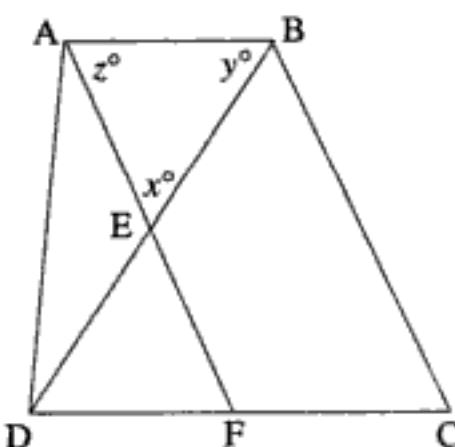
- (1) MO = ON
- (2) PQ = 2QR

14. How many minutes does the clock lose a day?

- (1) The clock reads 6:00 when it is really 5:48
- (2) The clock is 40 seconds fast each hour.

15. Is angle l greater than angle m in triangle LMN?

- (1) $55 \leq m \leq 70$
- (2) $55 \leq n \leq 70$

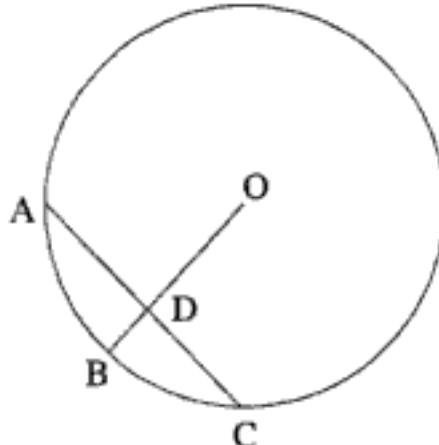


16. In trapezoid ABCD, what is the length of AB?

- (1) $x = y = z$
- (2) EB = 6

17. Does L = M?

- (1) $\frac{M}{L} = 1$.
- (2) $LM = M^2$.



18. What is the diameter of the circle?

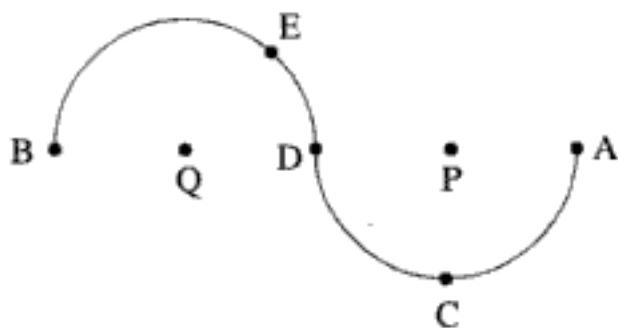
- (1) $AC = 16$
- (2) $DB = 6$

19. What is the area of square EFGH?

- (1) $EG = 13$
- (2) $FH = 13$

20. If a hockey team gains 2 points for a win, 1 point for a tie, and no points for a loss, how many points does the team now have?

- (1) The team has won 13 more games than it has tied.
- (2) The team has played 52 games.

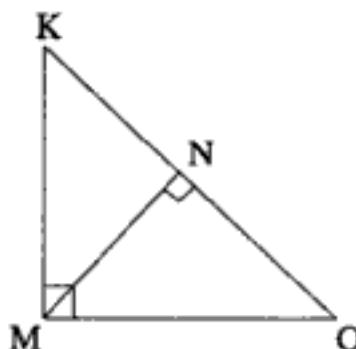


21. Q and P are the centers of the arcs. What is the length of ACDEB?

- (1) $QE = 6\frac{1}{2}$
- (2) $QP = DA$

22. How many pints of oil are contained in the can?

- (1) $\frac{1}{2}$ pint of oil fills up $\frac{1}{5}$ of the can.
- (2) 5 pints of oil are needed to fill 2 cans.



23. What is the length of KO?

- (1) $MN = 5\sqrt{2}$
 - (2) $KM = MO = 10$
- 24.** How much did George weigh before his diet?
- (1) He lost 8 pounds.
 - (2) He now weighs $\frac{23}{24}$ of his former weight.

25. How much time will a computer need to solve 150 problems?

- (1) The computer needs 50 seconds to solve the first problem.
- (2) A man needs 6 hours to solve the 150 problems.

26. Which element weighs the most, Argon, Sodium, or Sulphur?

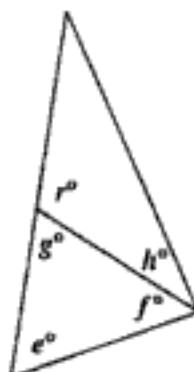
- (1) 2 atoms of Sulphur weigh more than one atom of Argon or one atom of Sodium.
- (2) 2 atoms of Sodium weigh less than one atom of Argon or one atom of Sulphur.

27. The contents of how many cubes with sides measuring 2 can fit into a container?

- (1) The contents of 3 cubes of side 4 can fit into the container.
- (2) The contents of 8 cubes of side 3 cannot fit into the container.

28. What is Wayne's height?

- (1) If Wayne grew another 5 inches, he would be as tall as Marty.
- (2) If Marty were 8 inches shorter, he would be as tall as Wayne was last year.

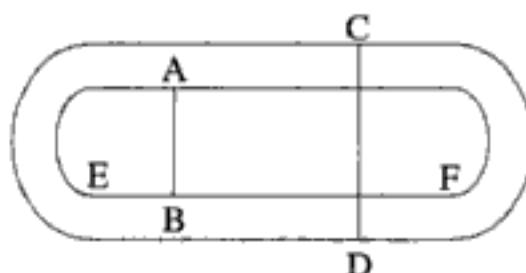


29. What is the numerical value of e ?

- (1) $h + g = 115$
- (2) $i - f = 75$

30. How many yards of cloth must Mrs Roth buy to make 3 identical dresses?

- (1) She needs 3 yards of cloth to make one such dress.
- (2) Usually she averages 4 yards of cloth per dress.



31. If the straight portion of the track EF is 100 yards long, how much longer is a lap for a runner on the outer track than for a runner on the inner track?

(the curved portions of the track are semicircles.)

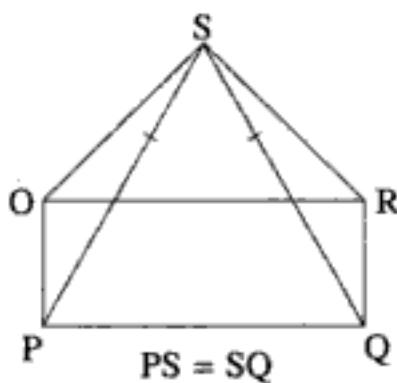
- (1) $CD = 20$ yards
- (2) $AB = 10$ yards

32. How many words are listed in the 1280 page dictionary?

- (1) Page 387 lists 50 words.
- (2) There are 2,000 words listed under "A".

33. If there were 52,000 people living in Woodridge in 1968, what was the percentage increase in population from 1967 to 1968?

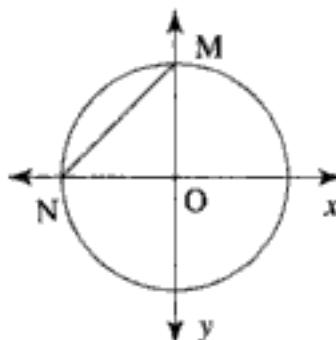
- (1) Since 1960 the average percentage population increase was 5.3 per cent
- (2) In 1967 there were 48,000 people living in Woodridge.



34. In the above figure, ORQP is a rectangle, angle OSR is a right angle, and triangle PQS is isosceles. What is the measure of angle PSQ?

- (1) Angle SPQ = 70°
- (2) Angle QSR = 25°

35. What was the average temperature during August?
- The high temperature for August 6 was 98° F.
 - The low temperature for August 10 was 63° F.
36. If A and B are numbers, which weighs more, A feathers or B stones?
- $A = 700 B$
 - 2 pounds = A feathers = B stones
37. What grade must Perry receive on his next exam so that his total average for the term will be 90?
- The next test will be the sixth of the term.
 - His average is now 88.
38. Judy walked from Monticello to Liberty, a walking distance of 10 miles. If she left Monticello at 9 A.M., what was her average walking speed in miles per hour?
- Judy walked into Liberty at 20 minutes past noon.
 - Judy arrived in Liberty after walking $3\frac{1}{3}$ hours.



39. The origin is at the center of the above circle. Will the point located at (3, 2) be within the area bounded by the circle?
- The radius of the circle is 3.
 - $MN = 3\sqrt{2}$
40. Can Truck A pass safely underneath an elevated highway 12 feet above the ground?
- Truck B can pass safely underneath the highway.
 - Truck B is taller than Truck A.
41. Is the base of isosceles triangle 1 greater than the base of isosceles triangle 2?
- The vertex of triangle 1 measures 32°.
 - The vertex of triangle 2 measures 54°.

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$$\frac{1}{H} + \frac{1}{10} = \frac{1}{6}$$

$$H = 15$$

6. (D) The area of the shaded area is the area of the circle with radius OA minus the area of the circle with radius OB. Since $A = \pi r^2$, the ratio is

$$\frac{\text{shaded area}}{\text{unshaded area}} = \frac{\pi(OA)^2 - \pi(OB)^2}{\pi(OB)^2} = \frac{(OA)^2 - (OB)^2}{(OB)^2}$$

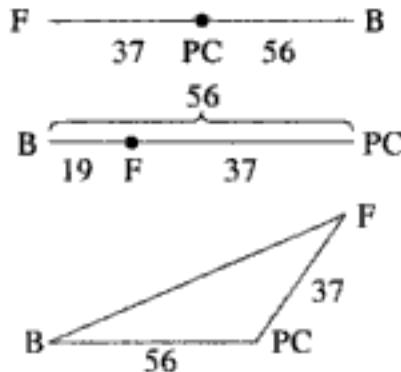
Substituting from statement 1, the ratio is

$$\frac{9(OB)^2 - (OB)^2}{(OB)^2} = \frac{8}{1}$$

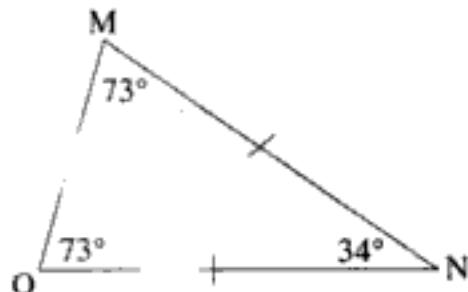
Substituting from statement 2,

$$OA = OB + AB = 3OB$$

which is the same as statement 1.



7. (E) Birenburg can be anywhere between 19 and 93 miles from Ferenci.
 8. (A) The only number whose reciprocal is less than .12 and greater than .1 is 9. (Its reciprocal is .11.) Twice any number is even, therefore Statement 2 is inconclusive.



9. (C) Sketch a diagram and use the information in both statements to answer the question. Remember: Base angles of an isosceles triangle are equal. The answer is no.

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48. (C) The diagonal of the rectangular solid is the hypotenuse of the right triangle formed by the height at an edge of the solid and the diagonal of the base. The height is 3 inches. The diagonal of the base is found with the Pythagorean theorem. $6^2 + 8^2 = (\text{hypotenuse})^2$. The hypotenuse equals $\sqrt{84}$. Using the Pythagorean theorem again we will find the length of the diagonal. $3^2 + (\sqrt{84})^2 = (\text{diagonal})^2$.

The diagonal equals $\sqrt{93}$.

49. (E) Since there are between 1 and 3 pictures on each page, there can be between 67 and 201 pictures in the book. However we do not definitely know whether there are more than 200 pictures in the book.
50. (D) The following formula gives the measures of each angle in a regular polygon:

$$A = \frac{(n - 2) 180^\circ}{n}$$

where A is the measure of each angle and n is the number of sides in the polygon for statement (1), substitute 120° for A in the formula

$$\begin{aligned} 120^\circ &= [(n - 2) 180^\circ]/n \\ \Rightarrow 120n &= 180n - 360 \\ \Rightarrow 60n &= 360 \quad \text{or} \quad n = 6 \end{aligned}$$

for statement (2).

Transform the equation into following form by multiplying both sides by n :

$$An = (n - 2) 180^\circ$$

Substituting 720° for (An) since the measure of the angle multiplied by the number of sides given the total sum of the interior angles.

$$\begin{aligned} \text{So,} \qquad 720^\circ &= (n - 2) 180^\circ \\ 4 &= n - 2 \\ \text{or} \qquad n &= 6 \end{aligned}$$

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7. Statement:

All gates are mates. All mates are fates.

Conclusions

1. All fates are gates.
2. All gates are fates.

8. Statement:

Some books are novels

Some novels are epics.

Conclusions

1. Some books are epics.
2. Some epics are books.

9. Statement: All rats are mats.

Some mats are meats.

Conclusions

1. Some mats are rats.
2. Some meats are cats.

Assumptions and Conclusions

10. (i) Ashish is a driver. So, Ashish is a smoker.

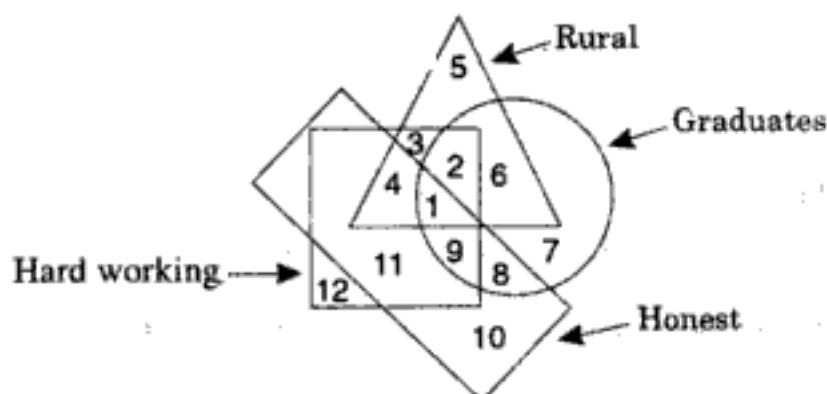
(ii) Drivers are smokers.

11. (i) Sparrows are not green and are difficult to shoot.

Therefore, parrots are not difficult to shoot

(ii) Parrots are green.

Questions (12-15) are as per below diagrams:



12. Graduate, hard-working and honest

rural people are indicated by

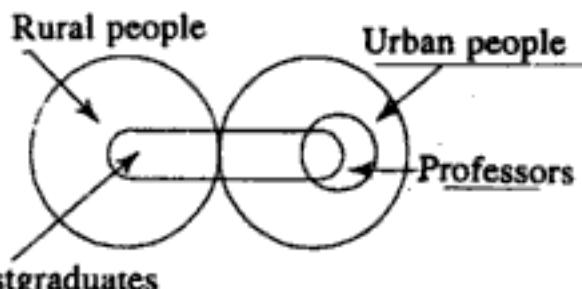
- (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

13. Rural people who are hard-working and graduates but not honest are indicated by
 (A) 1 (B) 2 (C) 3 (D) 4 (E) 5
14. Urban graduates who are neither hard working nor honest are represented by
 (A) 5 (B) 10 (C) 11 (D) 4 (E) 7
15. Rural graduates who are neither honest nor hard-working are indicated by
 (A) 6 (B) 2 (C) 4 (D) 3 (E) 9

Questions (16-19) are as per the below diagram

16. Which of the following statements is true?

- (A) All urbans are post graduates.
- (B) All post graduates are urbans.
- (C) All professors are urban people.
- (D) All rural people are professors.



17. Choose the correct statement.

Postgraduates

- (A) There are some postgraduates who are rural people.
- (B) No professor is urban.
- (C) All post-graduates are rural.
- (D) All post-graduates are urban.

18. Which of the following statements is true?

- (A) All rural peoples are professors.
- (B) There are some rural people who are post-graduate and professors.
- (C) All rural people are post-graduates.
- (D) No professor is rural.

19. Mark the correct statement.

- (A) All urban people are post-graduates.
- (B) All rural peoples are professors.
- (C) Some professors are rural but not urban.
- (D) Some urban people are not post graduates.

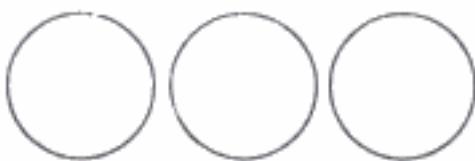
Questions (20-24) are as per the below diagram:

20. Lions, Dens, Sick-animals

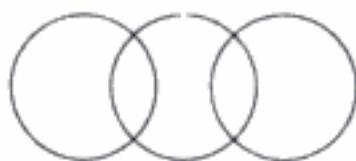
21. Rajiv Gandhi, Prime Ministers of India, Indian Citizens

22. Africa, Earth, Universe

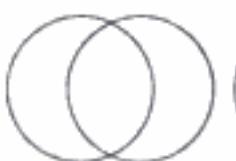
23. Comb, Nails, Hair



(a)



(b)



(c)



(d)



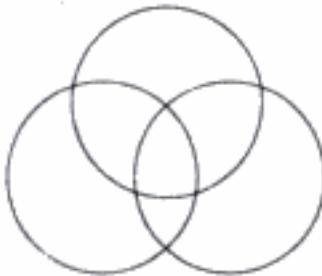
(e)

24. Cricketers, Athletes, Dogs

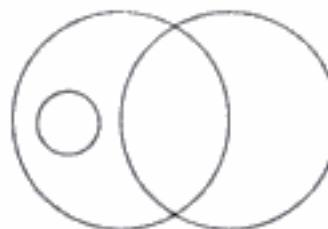
Questions (25-27) are as per the below diagram:



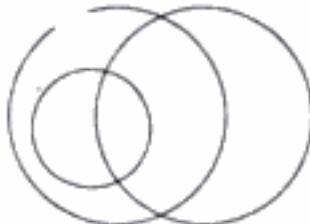
(a)



(b)



(c)



(d)



(e)

25. Sisters, Mothers, Nurses

26. Asians, Indians, Punjabis

27. Things made of paper, Napkins, White objects

Logical Deductions

28. Statements:

- (A) Some parrots are pigeons.
 (B) All pigeons are crows.

Conclusions

- I. Some parrots are crows.
 - II. All parrots are crows.
 - III. Some crows are parrots.
 - IV. All pigeons are parrots.
- (a) None of the conclusions follow.
 (b) All the conclusions follow.
 (c) only II and IV follow.
 (d) Only I and III follow.

29. Statements:

- (A) All clerks are typists.
 (B) Some typists are stenos.

Conclusions

- I. Some stenos are clerks.
 - II. No steno is a clerk.
 - III. All typists are clerks.
 - IV. All clerks are stenos.
- (a) All the conclusions follow.
 (b) None of the conclusions follow.
 (c) Either I or II follows.
 (d) Only IV follows.

30. Statements:

- (A) All notebooks are highlighter pens.
 (B) All highlighter pens are blue.

Conclusions

- I. Some blues are notebooks.
 - II. No blue is a notebook.
 - III. All blues are notebooks.
 - IV. All highlighter pens are notebooks.
- (a) None of the conclusions follow.

- (b) All the conclusions follow.
- (c) Only I follows.
- (d) Only II and IV follow.

Analysis of Statements

31. Statement: Should Indian rupee be made equivalent to the US Dollar
Arguments

- X. Yes, this will help reduce our import bill.
- Y. No, this is not possible.

32. Statement: Should computers be used in banks?
Arguments

- X. Yes, this will reduce the scams.
- Y. No, it will replace men, who will then die with hunger.

33. Statement : Should education for girl-child be made free?
Arguments

- X. Yes, as this will uplift the status of girls in the coming generations.
- Y. No, as this will be an assault on equality of sexes in society.

Family/Blood Relation Questions

The following information pertains to Ques 34-37.

Asha and Dara are children of Mr Dass.

Asha marries Suresh Chopra and Sunil, Sanjay and Sonu are born to them.

Sunil is married to the eldest daughter of Mr and Mrs Roy.

Bindu is younger to Rita and older than Sita and all are daughters of Mr. and Mrs Roy.

Gita is Sunil's daughter.

34. What is Sanjay's Surname

- (A) Dass (B) Roy (C) Chopra (D) None
- (E) Cannot be determined

35. Who is married to sunil?

- (A) Bindu (B) Sita (C) Rita (D) Meena (E) None

36. How is Dara related to Sonu?

- (A) Brother-in-law (B) Uncle (C) Maternal uncle
- (D) Brother (E) None

37. What is Gita's Surname ?

- (A) Chopra (B) Roy (C) Dass (D) Suresh (E) None

Age Doubts

38. Which number gives the same result when added to $1\frac{1}{2}$ and when multiplied with $1\frac{1}{2}$?

- (A) 1 (B) 3 (C) 5 (D) 7

39. The average age of 3 daughters of Mrs. Mathews is 15 years. If the age of Mrs. Mathews is added, the average becomes 20 years. How old is Mrs Mathews?

- (A) 35 (B) 60 (C) 55 (D) 45 (E) 50

40. Mrs. Malik is twice as old as her daughter Manu. 20 years ago, the age of Mrs Malik was 12 times Manu's age. Calculate how old is Mrs Malik today.

- (A) 40 (B) 45 (C) 60 (D) 50 (E) 44

Arrangement Problems

Directions: (Q.41-44) The following statements describe the relative hierarchy of employees in an organisation

- (i) Kuldeep is the immediate boss of Raveesh
- (ii) Vaneet is Sheetal's boss.
- (iii) Raveesh works under Rohit.
- (iv) Suchita is Vaneet's boss.

41. Which of the following statements is necessarily true?

- (A) Kuldeep is Sheetal's boss.
- (B) Raveesh is Suchita's boss.
- (C) Suchita is Sheetal's boss.
- (D) Vaneet works under Kuldeep.
- (E) Rohit is superior to Sheetal.

42. If Vaneet is superior to Manoj, then

- (A) Rohit is superior to Sheetal.
- (B) Rohit is superior to Manoj.
- (C) Suchita is superior to Manoj.
- (D) Raveesh is superior to Manoj.

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Answers and Explanations

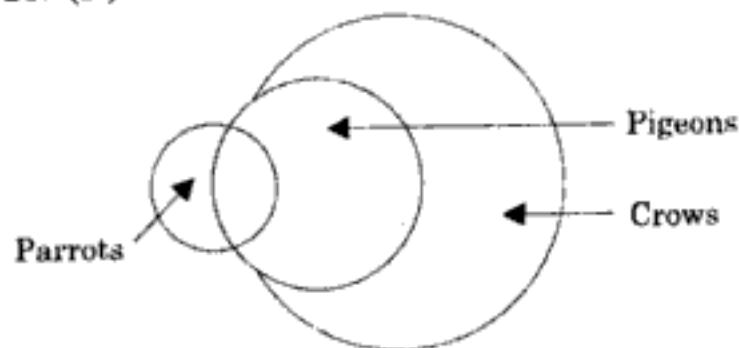
1. (A) $A + A = A$
2. (D) $I + I = \text{Non conclusion}$
3. (A) $A + E = E$; conclusion (2) is irrelevant.
4. (B)
5. (B)
6. (A)
7. (B)
8. (D)
9. (A)
10. (A) Both are relational arguments.
11. (B) None of the assumptions suggest that green coloured birds are easy to shoot.
12. (A)
13. (B)
14. (E)
15. (A)
16. (C)
17. (A)
18. (B)
19. (D)
20. (C) ✓
21. (B) ✓
22. (B) ✓
23. (A)
24. (C)

25. (B)

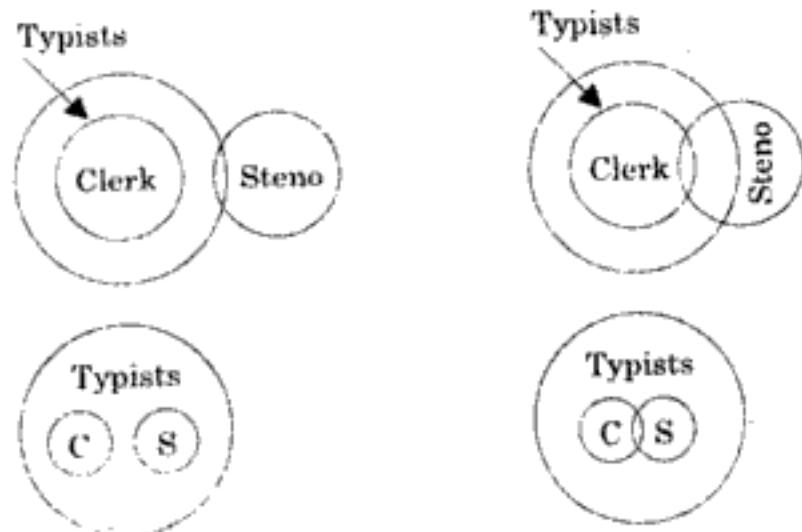
26. (E)

27. (B)

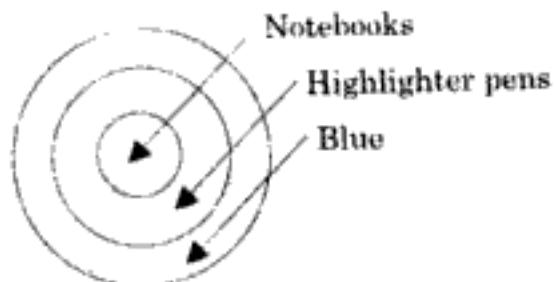
28. (D)



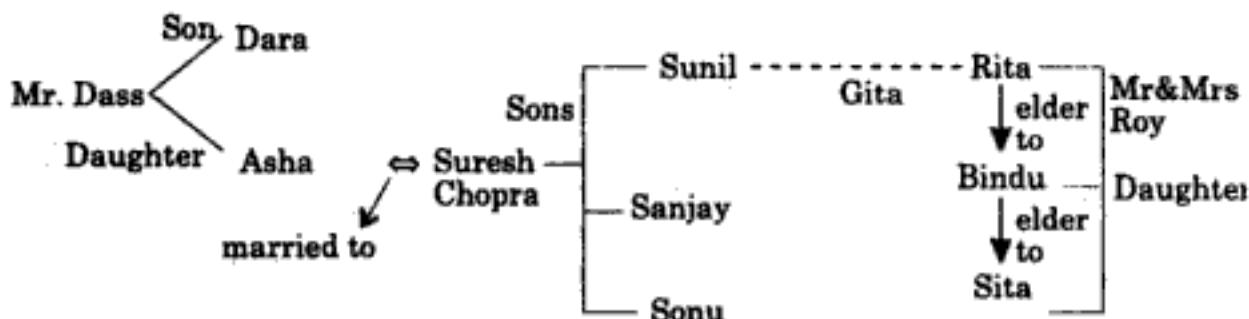
29. (C)



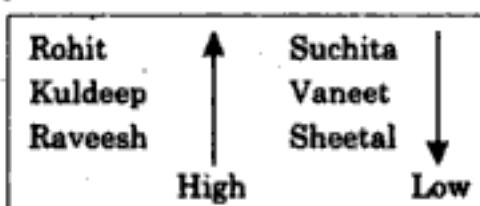
30. (C)



31. (B)
32. (E)
33. (A)
34. (C)
35. (C)
36. (C)



37. (A) Fig. for Ques. 34-37
 38. (B) $(A + 1\frac{1}{2}) = (A \times 1\frac{1}{2})$ or $(A + 3/2) = (3A/2)$
 or $(2A + 3)/2 = (3A)/2 \Rightarrow A = 3.$
 39. (A) Mrs Mathews' age will be $(4 \times 20 - 3 \times 15) = 80 - 45 = 35$ years.
 40. (E)
 41. (C)
 42. (C)
 43. (D)



Figs. for Ques. 41-44

44. (A) If Vinay is Kuldeep's boss, then Rohit must be Vinay's boss. Since Kuldeep is immediate boss of Raveesh and also Raveesh is under Rohit, Rohit must be superior to Kuldeep. Also Suchita is superior to Vaneet and Vaneet is superior to Sheetal, thus Suchita is superior to Sheetal. The figure will help you understand the hierarchy.
 45. (C)
 46. (C)
 47. (B)
 48. (D)

TEST PAPER - 2

Immediate Inference

1. **Statements:** Some tomatoes are peas.

Some peas are beans.

Conclusion

1. Some tomatoes are beans.
2. Some beans are tomatoes.

2. **Statements:** Some fish are cakes.

All cakes are biscuits.

Conclusion

1. All biscuits are cakes.
2. Some biscuits are Cakes.

3. **Statements:** All cakes are breads.

No bread is roasted.

Conclusion

1. No cakes are roasted.
2. Some breads are cakes.

Syllogism

4. **Statement:** More than half of pears are grapes.

The remaining are bananas.

Conclusions

1. Grapes, are more in number than bananas.
2. Only very good pears are bananas.

5. **Statement:** All nurses are beautiful.

Some girls are nurses.

Conclusions

1. All beautiful nurses are girls.
2. Some girls are beautiful.

6. **Statement:** Some cakes are candies.

Some candies are ice-creams.

Conclusions

1. Some cakes are ice-creams.
2. Some ice-creams are cakes.

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13. How many youths uneducated are from backward classes?
 (A) 18 (B) 14 (C) 3 (D) 22 (E) 6
14. How many educated youths are employed?
 (A) 18 (B) 20 (C) 15 (D) 9 (E) 11
15. How many educated youths are from backward classes ?
 (A) 28 (B) 14 (C) 6 (D) 9 (E) 20
16. How many uneducated youths from backward classes are employed?
 (A) 7 (B) 11 (C) 14 (D) 5 (E) 3
17. How many youths are unemployed?
 (A) 36 (B) 19 (C) 25 (D) 26 (E) 16
18. How many youths are employed?
 (A) 12 (B) 16 (C) 10 (D) 21 (E) 14
19. How many youths from backward classes are employed?
 (A) 7 (B) 11 (C) 15 (D) 8 (E) 13

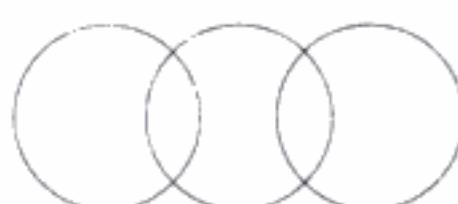
Questions 20-27:



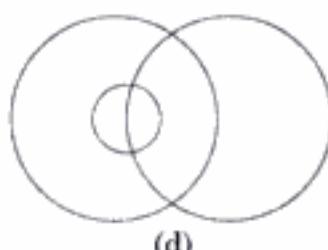
(a)



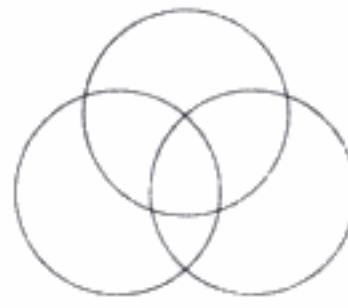
(b)



(c)



(d)



(e)

20. Popes, Catholics, Protestants
21. Illiterate people, blind creatures, people who can read Hindi
22. Abraham Lincoln, US Presidents, Males
23. People, Parakeets, Individuals than can walk on two legs.
24. Schizophrenics, Mentally retarded people, geniuses

25. Automobile drivers. Students. Indians
26. People, Husbands. Males with more than two males
27. Soil, Plants, Azaleas.

Logical Deductions

28. Statements:

- (A) All men are animals.
(B) No women is a man or None of the women are men.

Conclusions

- I. No woman is an animal.
II. All women are animals.
III. All animals are women.
IV. Some women are men.
(a) Only I follows.
(b) Only II follows.
(c) None of the conclusions follow.
(d) Only III follow.

29. Statements:

- (A) Some pens are books.
(b) All books are red.

Conclusions

- I. All red are pens.
II. Some red are pens.
III. All pens are books.
IV. No pen is red.
(a) All the conclusions follow.
(b) None of the conclusions follow.
(c) Only I follows.
(d) Only II follows.

30. Statements:

- (A) All flowers are buds.
(B) Some buds are plants.

Conclusions

- I. Some plants are flowers.

- II. No plant is a flower.
 - III. All flowers are plants.
 - IV. All buds are plants.
- (a) Either I or II follow.
 (b) Neither I nor II follows.
 (c) All the conclusions follow.
 (d) None of the conclusions follow.

31. Statement: Should MNCs be allowed to enter into India?

Arguments

- X Yes, they would bring in more money?
 Y No, they will start ruling us after some years?

32. Statement: Should prices of gold be cut down to one fourth of what is prevalent today?

Arguments

- X Yes, people will start buying more gold.
 Y No, People no longer buy Gold.

Family/Blood Relation Qualms

33. There are six persons — S1, S2, S3, S4, S5 and S6.

- S3 is the sister of S6.
 - S2 is the brother of S5's husband.
 - S4 is the father of S1 and grandfather of S6.
 - There are two fathers, one mother and three brothers in the family.
- How is S6 related to S5?

(A) Husband (B) Son (C) Father (D) Daughter (E) Uncle

Following information pertains to Ques 34-36.

- In a family of Suresh three generations are living together.
- The family consists two married couples having two children each.
- Gopal is lucky to have two grandchildren.
- There are two housewives and both are beautiful.
- Gopal who is Manoj's father, is a lawyer and earns the most.
- Jyotsna is the sister of a lecturer and herself is a nurse.
- Anuradha is married to a lecturer who is Nidhi's son.
- Jyotika is the grand-daughter of one of the housewives and is a classical dancer.

- 34.** What is Manoj's profession?
 (A) Student (B) Lecturer (C) Lawyer
 (D) Cannot be determined (E) None of these.

- 35.** How many male members are there in the family?
 (A) 2 (B) 3 (C) 4 (D) Cannot be determined
 (E) None of these

- 36.** Which of the following statements is not true?
 (A) The nurse is sister-in-law of the housewives.
 (B) Gopal has two grand children.
 (C) Nidhi has a son and a daughter.
 (D) Gopal has two children.
 (E) Anuradha has a son and a daughter.

Age Doubts

- 37.** Sonu and Manu's age ratio is 4 : 3. If sum of their ages is 28 years, the ratio of their ages after 4 years will be
 (A) 5 : 4 (B) 2 : 3 (C) 5 : 6 (D) 3 : 2 (E) 1 : 4
- 38.** Ratio of Dolly and Vandana's age is 2 : 3 and the sum of their ages is 60 years. How old is Dolly?
 (A) 12 (B) 16 (C) 24 (D) 30 (E) 20
- 39.** The average age of 10 boys in a hostel comes out to be 14. A new admission brought down their average age by one year. How old the new recruit must be
 (A) 4 (B) 5 (C) 12 (D) 3 (E) 11

Arrangement Problems

- 40.** The following statements describe the relative hierarchy of employees in an organisation.
 (i) Kuldeep is the immediate boss of Raveesh
 (ii) Vaneet is Sheetal's boss.
 (iii) Raveesh works under Rohit.
 (iv) Suchita is Vaneet's boss.

If Raveesh is boss of Suchita, then

- I. Raveesh is Sheetal's boss

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3. E $A + E = E$, which leads to the conclusion that 'No cakes are roasted', but also note that statement (1) can be converted into conclusion (2) directly.
Thus, both the conclusion follow.
4. A
5. B
6. D
7. D
8. D
9. A
10. B The assumptions are relational propositions whereas the conclusion is categorical.
11. B Both are relational.
12. E
13. D
14. D
15. B
16. D
17. A
18. D
19. D
20. A
21. C
22. B
23. C
24. D
25. E

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TEST PAPER - 3

Immediate Inference

1. **Statements:** Some coats are jackets.

No jacket is brown.

Conclusions

1. Some coats are brown.
2. Some jackets are coats.

2. **Statements:** Some stones are diamonds.

All diamonds are rare.

Conclusions

1. Some stones are rare.
2. Some diamonds are stones.

3. **Statements:** Some marbles are stones.

All stones are glasses.

Conclusion

1. All glasses are stones.
2. Some glasses are stones.

4. **Statements:** All ships are birds. All birds are coins.

Conclusion

1. All coins are ships.
2. All ships are coins.

5. **Statements:** Some papers are notes.

Some notes are documents.

Conclusions

1. Some notes are papers.
2. Some documents are notes.

6. **Statements:** Some athletes are graduates.

Some graduates are cricketers.

Conclusions

1. Some athletes are cricketers.
2. Some cricketers are athletes.

7. **Statements:** All singers are listeners.

No listener is moody.

Conclusions

1. No singer is moody.
2. All listeners are singers.
8. **Statements:** Some cakes are trees.
Chocolate is a cake.

Conclusions

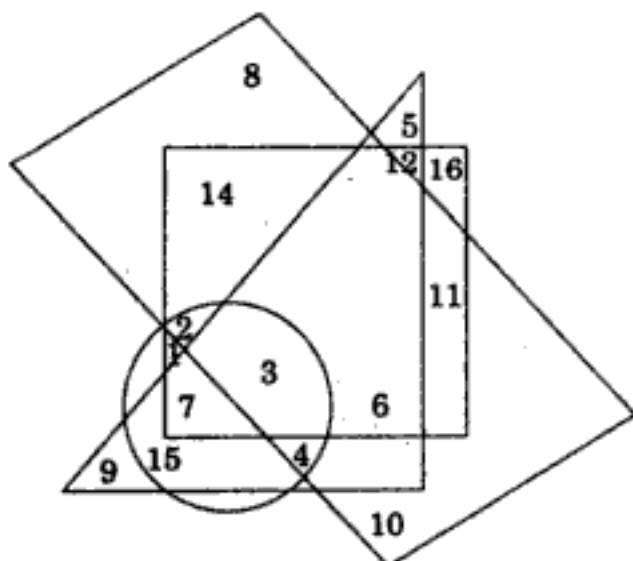
1. Chocolate is not a cake.
2. Some trees are cakes.

Assumptions and Conclusions

9. (i) Most girls are beautiful.
(ii) Most girls are unmarried.
So, some beautiful girls are married.
10. (i) All ants are birds.
(ii) All birds are flies.
So, all flies are ants.

Reasoning Logical Diagrams*Questions (11-15)**Directions:*

1. The rectangle represents men.
2. Circle represents graduates.
3. Triangle represents skilled persons.
4. Square represents employed persons.



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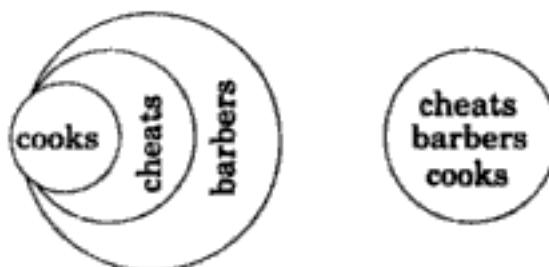
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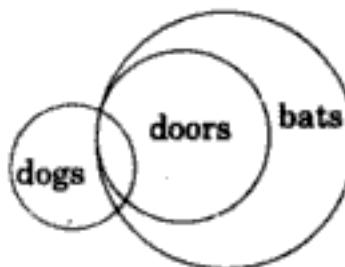
- (C) \$ is ($\phi + 2$) (D) £ is ($\gamma + 3$)
 (E) £ is ($\psi - 2$)
- 39.** Which of the following statements is true?
- I. ψ is halfway between ε and β .
 - II. If β is even, then ε is odd.
 - III. If β is odd, then £ is odd.
- (A) I only (B) II only (C) III only
 (D) I and III only (E) I and II only
- 40.** The integer halfway between £ and ϕ is
- (A) γ (B) β (C) \$ (D) ψ (E) ε
- 41.** If Σ is an additional integer, which must be false?
- (A) Σ is 5 less than £ and 2 less than β
 (B) Σ is four more than £ and 3 more than ε
 (C) Σ is greater than \$
 (D) ψ is greater than Σ .
 (E) Σ is 2 less than β and 2 more than γ .
- Directions:* Following questions (42-46) are based on the given sequence of numbers:
- 8 9 6 7 3 9 3 7 8 3 9 9 5 6 3 9 6 9 3 9 8
- 42.** How many 9's are there which are preceded by 3 but not immediately followed by 9 in the above set of numbers?
- (a) 1 (b) 4 (c) 5 (d) 2 (e) 3
- 43.** Which digit has least frequency in the above set of figures?
- (a) 8 (b) 9 (c) 5 (d) 6 (e) 3
- 44.** Which digit has the highest frequency leaving digit 9 in the above set of numbers?
- (a) 8 (b) 7 (c) 5 (d) 3 (e) None
- 45.** There are pairs of adjoining figures which add up to 12. How many such pairs are there?
- (a) 1 (b) 2 (c) 3 (d) 6 (e) None
- 46.** How many 3s are there not preceded by 9 but immediately followed by 9?

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11. B 12. B 13. A 14. B 15. A
 16. A 17. C 18. C 19. D 20. D
 21. D 22. A 23. C 24. A 25. A
 26. A 27. C
 28. B



29. D From statements A and B, some dogs are bats and all doors are bats, implies that some dogs are bats. Therefore, conclusion I follows. From statement A again, some dogs are bats, therefore some bats are dogs. Therefore conclusion III follows.



30. B

31. B

32. A }
33. B }

For explanation, see Figure given for Ans. 34-36 of test paper 2.

34. A 35. B

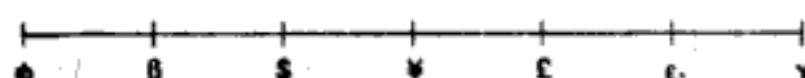
36. B Nitin-Ravi = Ravi - Lokesh

Nitin + Lokesh = 2 (Ravi)

So, 24 = 2 (Ravi), therefore Ravi = 12 years.

37. B 38. A

39. C For Ans (39-40)



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Conclusions

1. No door is a window.
2. No window is a door.

7. Statements: Some rivers are seas.

All seas are skies.

Conclusions

1. All skies are seas.
2. Some rivers are skies.

8. Statements: All fathers are sons.

All sons are grand-fathers.

Conclusions

1. All grand-fathers are fathers.
2. All fathers are grand-fathers.

Assumptions and Conclusions

9. Assumption

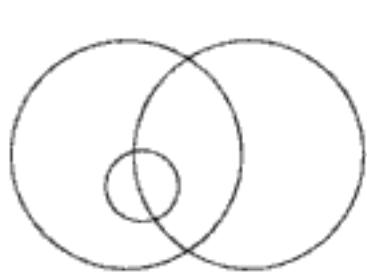
- (i) lions eat salt.
- (ii) salt is used in cooking food.

Conclusion

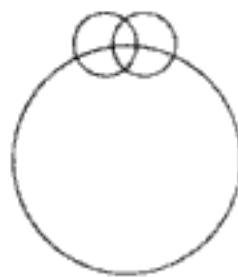
So, lions can cook their food.

Logical Diagrams

Questions (10-16)



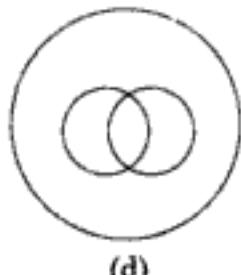
(a)



(b)



(c)



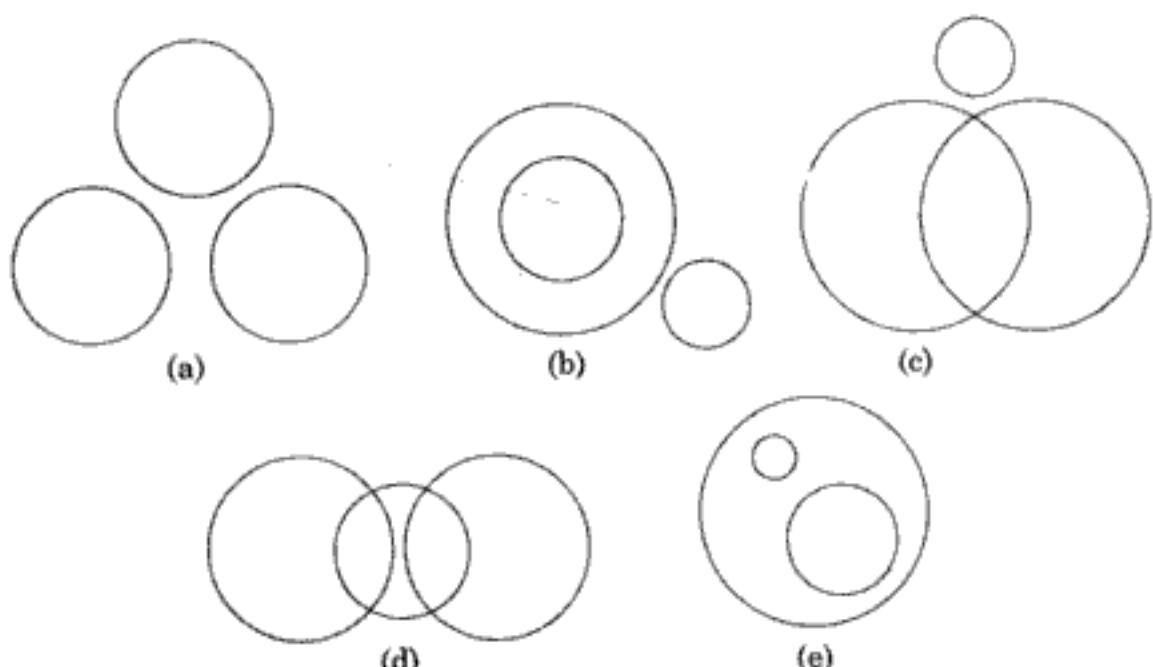
(d)



(e)

10. Queens, Royal family members, Administrators.
11. Vertebrates, obese males, Lady doctors.
12. People, Men, Football players.
13. Land animals, Tigers, Eagles
14. Stars, Earth, Sun
15. Man-made objects, Knives, Stain less steel objects
16. Teachers, Males, Athletes.

Questions 17-26



17. Professionals, Doctors, Engineers
18. Smokers, Lawyers, Non-smokers
19. Students, Children, Animals
20. Vehicles, Trucks, Cars
21. Fruits, Fish, Eatables
22. Pets, Dogs, Birds
23. Shirts, Bedsheets, Goldfish
24. Mammals, Cows, Crows
25. Surgeons, Forceps, Needles

26. Jeeps, Police-officers, Females.

Logical Deductions

27. Statements: (A) Some tins are round.

(B) Some cups are round.

Conclusions

- I. Some tins are cups.
 - II. All round things are either tins or cups.
 - III. Some tins are rectangular.
 - IV. Some cups are flat.
- (a) Only I follows.
 (b) Only III and IV follow.
 (c) None of the conclusions follow.
 (d) All the conclusions follow.

28. Statements

(A) All rivers are mountains.

(B) All forests are mountains.

Conclusions

- I. Some rivers are forests.
 - II. Every mountain is either river or forest.
 - III. All mountains are rivers as well as forests.
 - IV. No forest is river.
- (a) None follows.
 (b) All follow.
 (c) Either I or IV follows.
 (d) Only II follows.

29. Statements: (A) All letters are box files.

(B) All box files are challans.

Conclusions

- I. All letters are challans.
 - II. All challans are letters.
 - III. Some challans are letters.
 - IV. All box files are letters.
- (a) Only I & III follow.

- (b) Only I & II follow.
- (c) None of the conclusions follow.
- (d) All the conclusions follow.

Analysis of Statements

30. Statement: Should higher education be made free?

Arguments

- X. Yes, it will help those who cannot afford it at present.
- Y. No, it will give rise to unemployment only.

31. Statement: Should India make an atom bomb?

Arguments

- X. Yes, it will prevent the enemies from taking initiatives.
- Y. No, it is against the commitment made by India to use nuclear power for peaceful purposes.

32. Statement:

Should India make an atom bomb?

Arguments

- X. Yes, even Pakistan has made one.
- Y. No, there is no possibility of India indulging in nuclear war.

Family/Blood Relation Qualms

Questions 33-35:

Mr and Mrs Sharma have two children Asha and Shashi. Shashi married Radha, daughter of Mrs Mahajan. Suresh, son of Mrs Mahajan married Rita. Sonu and Rocky are born to Suresh and Rita. Uma and Sudha are the daughters of Shashi and Radha.

33. What is Sudha's relation to Asha?

- (A) Sister (B) Niece (C) Aunt (D) Daughter (E) None

34. How is Sonu related to Mr Mahajan?

- (A) Son-in-law (B) Son (C) Grandson (D) None of these
- (E) Cannot be determined

35. How is Asha related to Radha?

- (A) Mother-in-law (B) Aunt (C) Sister-in-law

Age Doubts

36. Average of ages of Eva and Meena is 12 years and average age of Meena, Teena and Zareena comes out to be 48. The total age of four girls would be ?
(A) 140 (B) 60 (C) 84 (D) 72
(E) Cannot be determined

37. In a class of 20 students, the average age is 16 years. If the age of the teacher is added to that of students, the average age of the class becomes 17 years. Calculate the age of the teacher.
(A) 24 (B) 37 (C) 47 (D) 57 (E) None of these

38. Treeza is as much younger to Eveline as she is older to eyeline. If the sum of age of Eveline and Eyeline is 80 years, how old is treeza.
(A) 64 (B) 46 (C) 32 (D) 48 (E) 40

39. The ratio of grandfather's age and grandson's age is 8:4. If the sum of their ages is 120 years, how old is the grand son?
(A) 18 (B) 22 (C) 40 (D) 42 (E) 58

Arrangement of Letters/Alphabets/Numbers

- 40.** Study the following sequence of numbers.

8 9 6 7 3 9 3 7 8 3 9 9 5 6 3 9 6 9 3 9 8

Which digit is exactly in the middle in the above set of numbers?

- (a) 8 (b) 3 (c) 9 (d) 5 (e) None

Directions: Following questions (41-43) are based on the given sequence of numbers

6 9 6 9 9 6 6 7 6 9 7 9 6 6 9 7 7 9 6 6 7

41. How many 9's are sandwiched between 6 and 7?

- (a) 2 (b) 3 (c) 4 (d) 1 (e) None

42. How many 6's are sandwiched between 9's?

- (a) 1 (b) 2 (c) 3 (d) 4 (e) None

43. How many 7's have a 6 before and after?

- (a) 1 (b) 2 (c) 3 (d) 4 (e) None

Arrangement Problems

Directions (Questions 44-46): If first six letters of the word

T H O U G H T F U L E S S N E S S

are reversed, the next six letters are written as they are and then remaining letters are reversed,

44. Which letter will be exactly in the middle?

- (a) F (b) U (c) L (d) T (e) None

45. Which two letters will be sandwiched between double T and double L?

- (a) NS (b) FE (c) FU (d) HT (e) None

46. If all vowels are removed which letter will be exactly in the middle?

- (a) T (b) L (c) F (d) H (e) None

Transaction Analysis

Directions (Questions 47-49): Study the following statements and answer the questions that follow.

- (i) Bengalis and Tamils are politicians, poets and warriors.
- (ii) Tamils and Punjabis are politicians, warriors and mathematicians.
- (iii) Punjabis and Gujarati's are politicians, businessmen and mathematicians.
- (iv) Gujaratis and Kashmiris are businessmen, poets and mathematicians.
- (v) Bengalis and Kashmiris are businessmen, poets and warriors.

47. The people who are politicians, poets, warriors and mathematicians?

- (a) Bengalis (c) Punjabis (b) Tamils (d) Gujaratis

48. The people who are politicians, businessmen, warriors and mathematicians?

- (a) Bengalis (c) Kashmiris (b) Tamils (d) Gujaratis

49. The people who are businessmen, poets, warriors and mathematicians?

- (a) Bengalis (c) Punjabis (e) Kashmiris (b) Tamils (d) Gujaratis

50. Five Friends Lokesh, Manoj, Gopal, Raveesh and Rohit have agreed to work together on a part-time job offered by a local restaurant. The restaurant opens five days a week and these five have the following schedules when they can work.

- (i) Neeraj and Raveesh can work on Monday, Tuesday and Wednesday.
- (ii) Raveesh and Rohit can work on Monday, Wednesday and Thursday.
- (iii) Rohit and Lokesh can work on Monday, Friday and Thursday.
- (iv) Lokesh and Manoj can work on Friday, Tuesday and Thursday.

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30. A

31. D

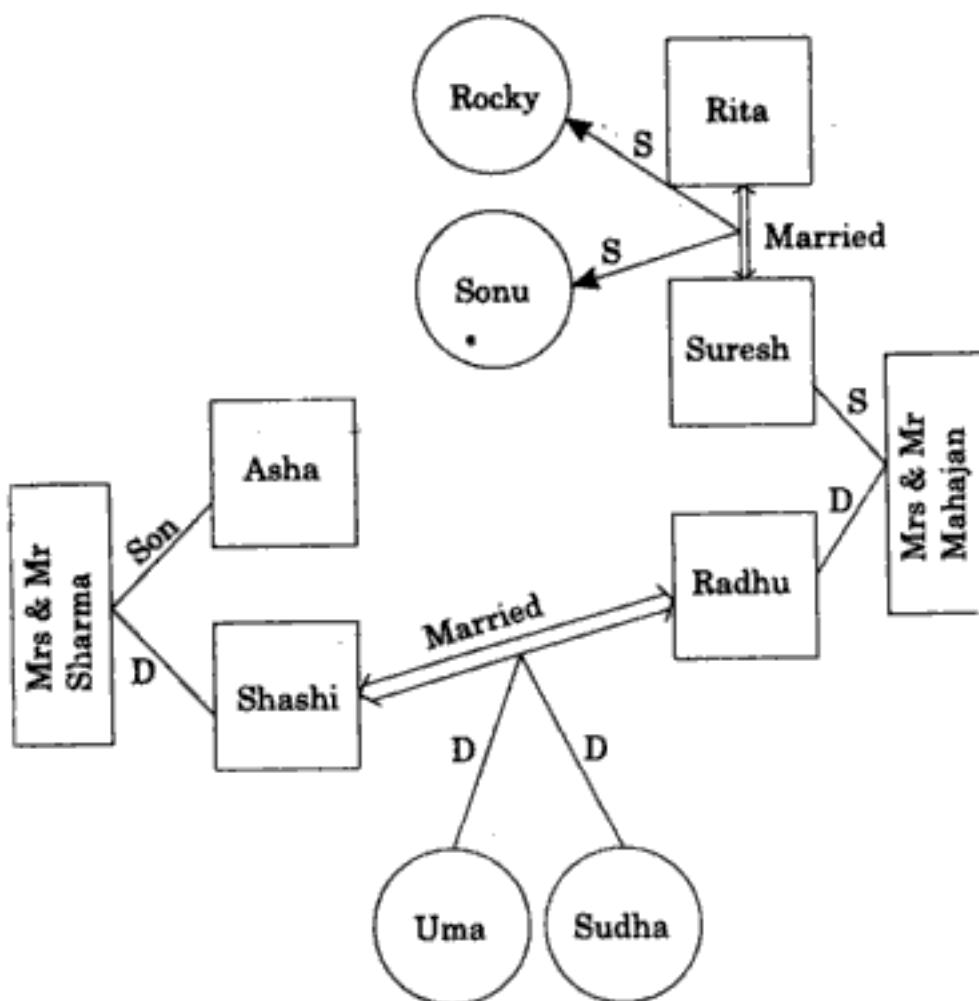
32. B

33. C

34. C

35. C

Fig for Ans 33-35



36. E

37. B $(21 \times 17 - 20 \times 16) = 37$ years

38. E

39. C $X = 120/(8 + 4) = 10,$

Therefore, Grandfather's age = $8X = 80$ years
 and Grandson's age = $4X = 40$ years.

40. C

41. C

42. C

43. A

44. B

H G U O H T T F U L E S S S E N S

45. C

H G U O H T T F U L E S S S E N S

46. E

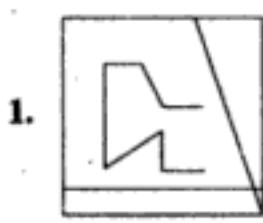
H G H T T F L S S S N S

47. B

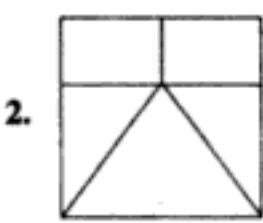
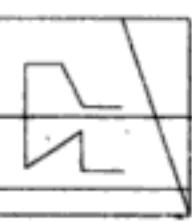
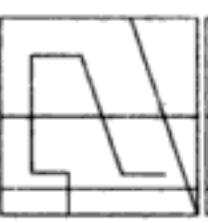
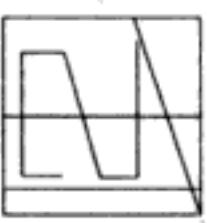
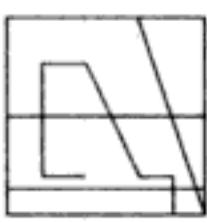
48. C

49. E

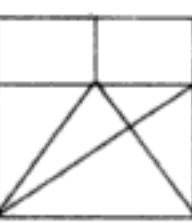
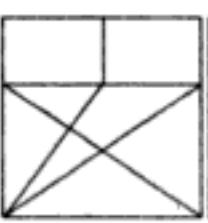
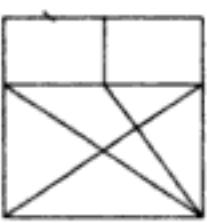
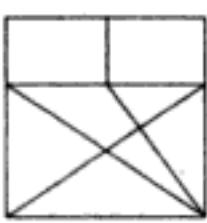
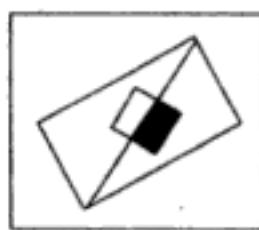
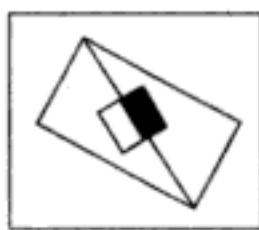
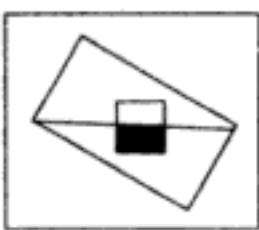
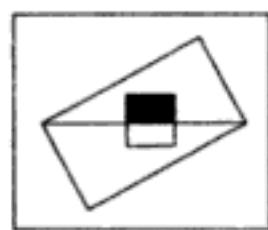
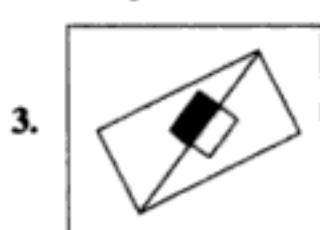
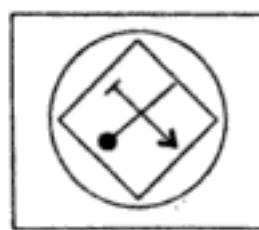
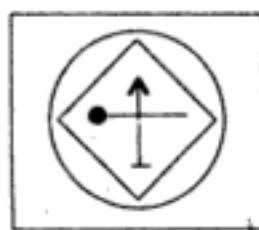
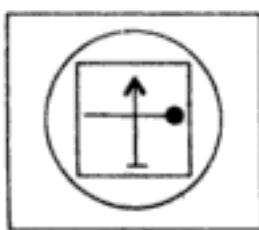
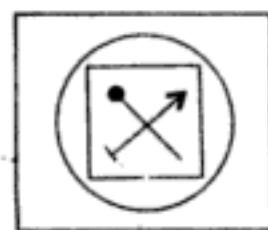
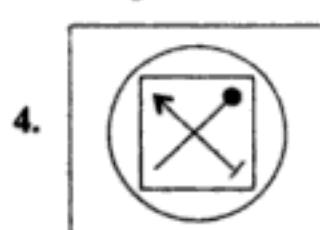
50. D

TEST PAPER - 5 (NON-VERBAL)**Detection of hidden figure in a given pattern**

(X)

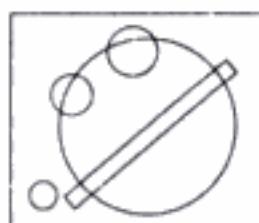
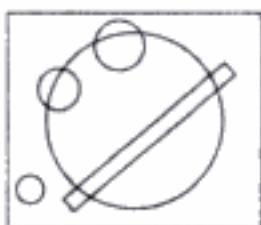


(X)

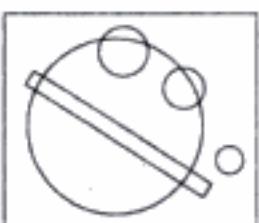
**Mirror reflection of a pattern****Main Figure****Main Figure**

Main Figure

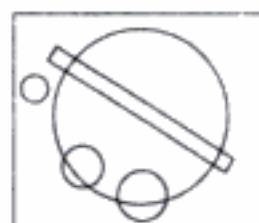
5.



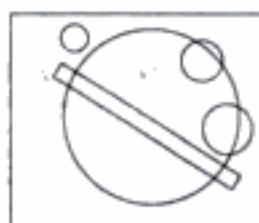
A



B



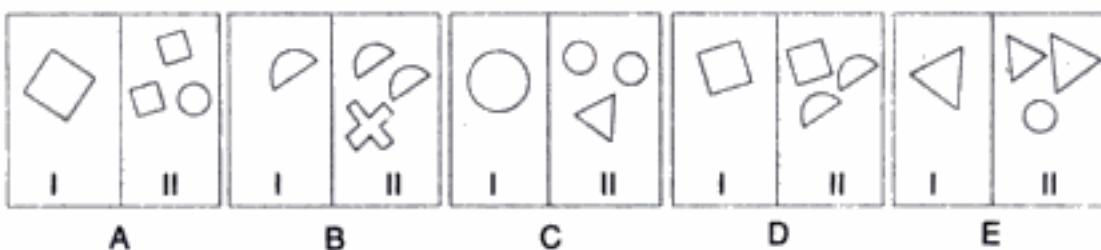
C



D

Pattern comparison between two sets of figures

6.



7.

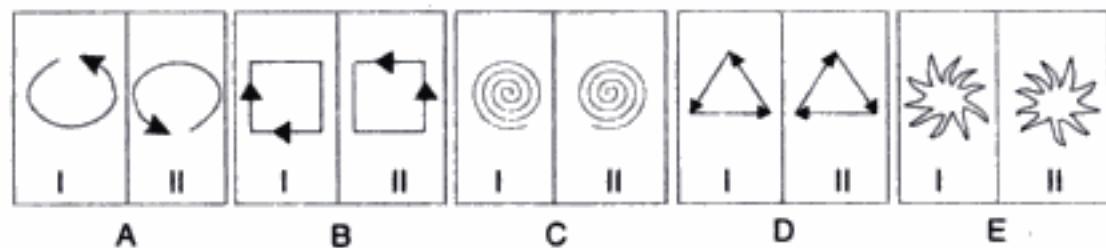
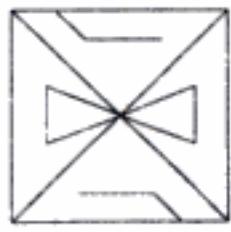
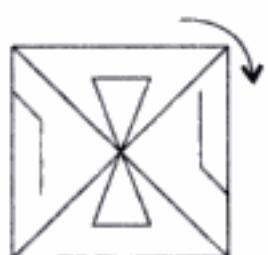
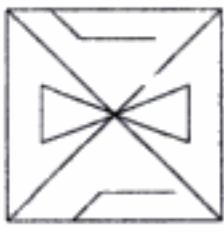


Figure rotation

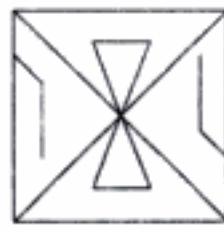
8.



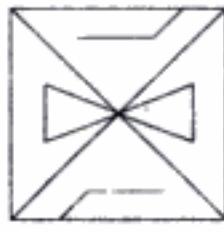
A



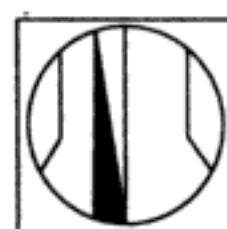
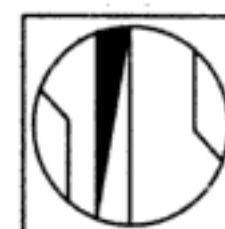
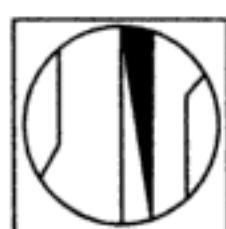
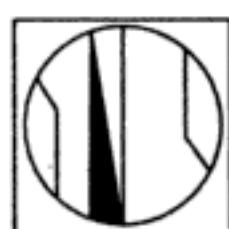
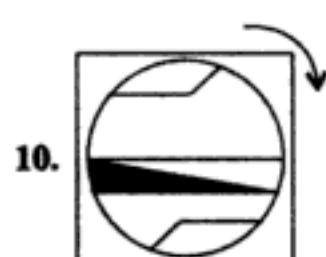
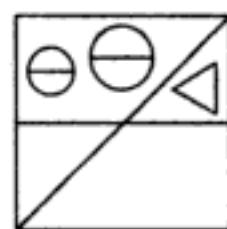
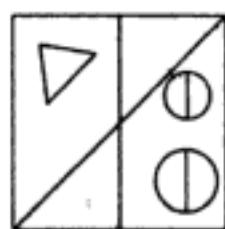
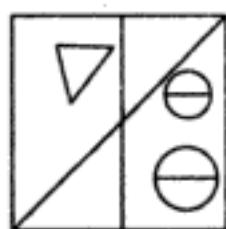
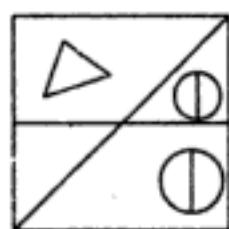
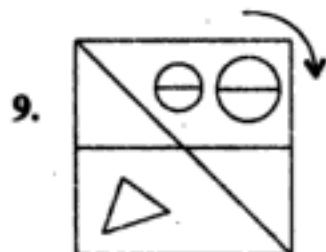
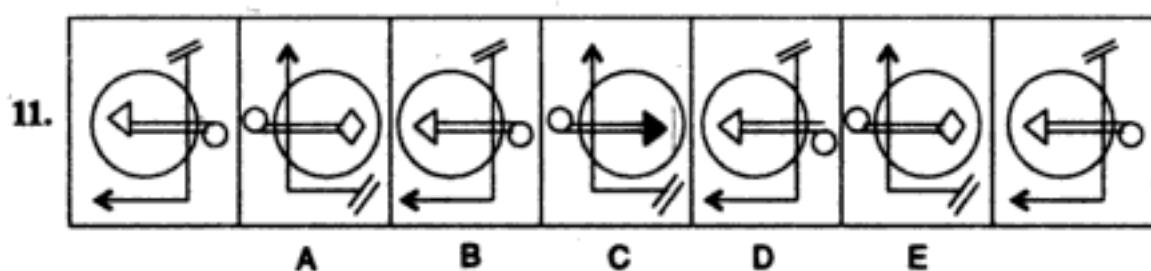
B



C



D

**Detection of figure out of series**

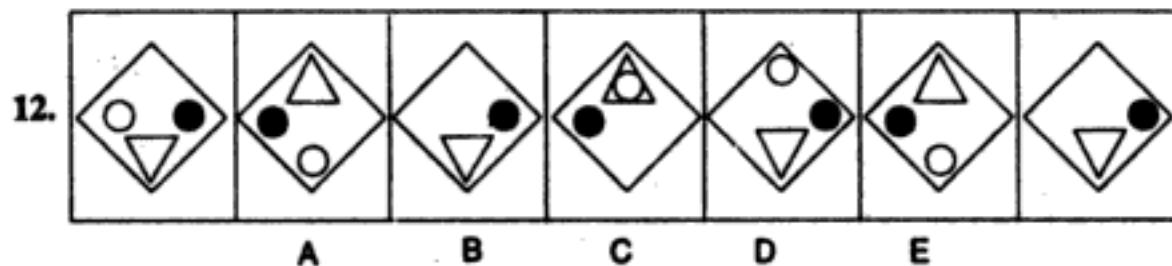
A

B

C

D

E



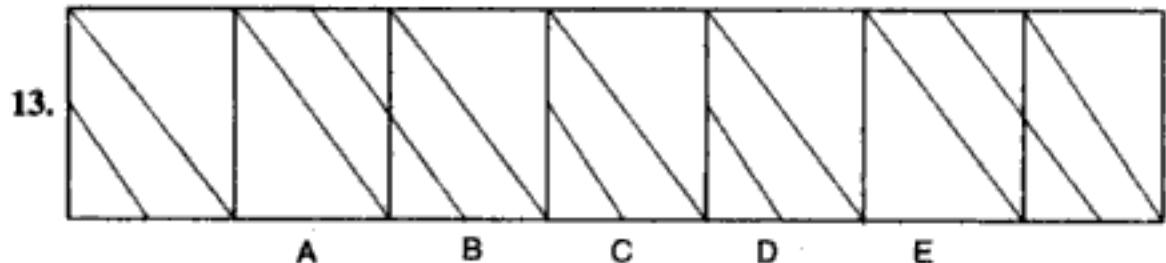
A

B

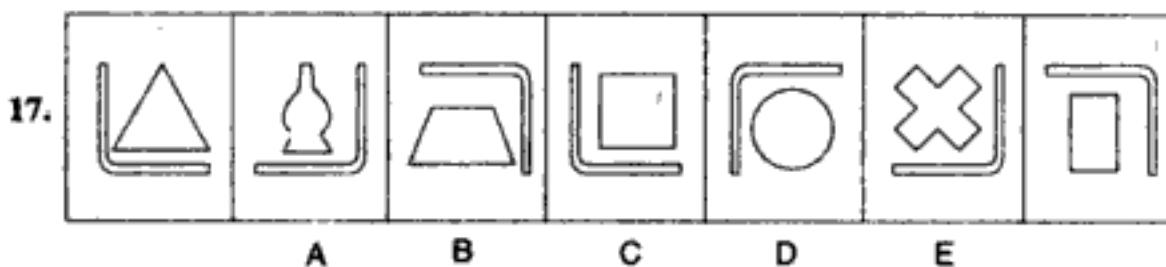
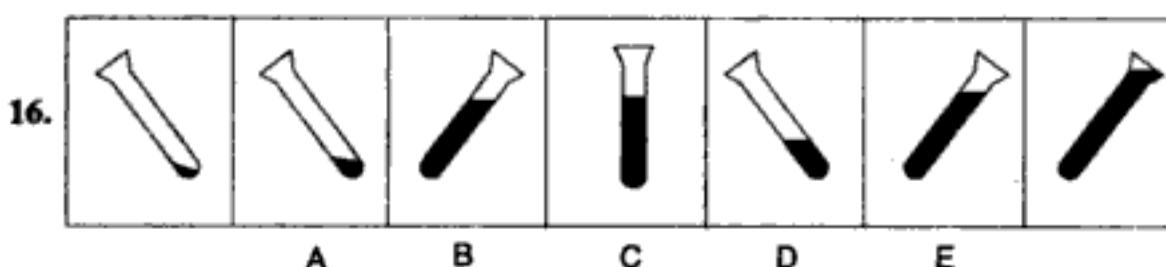
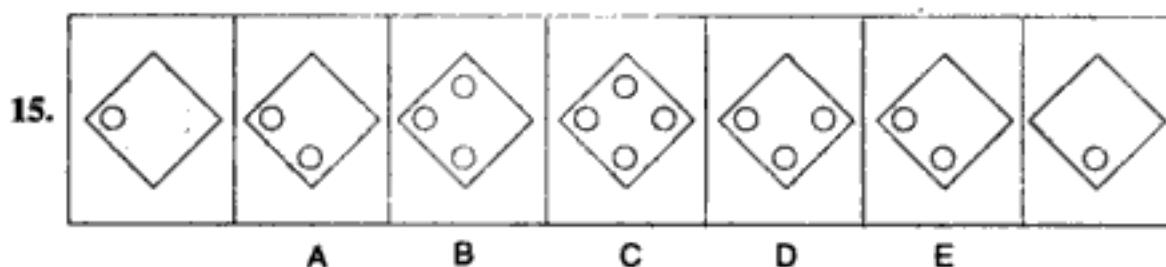
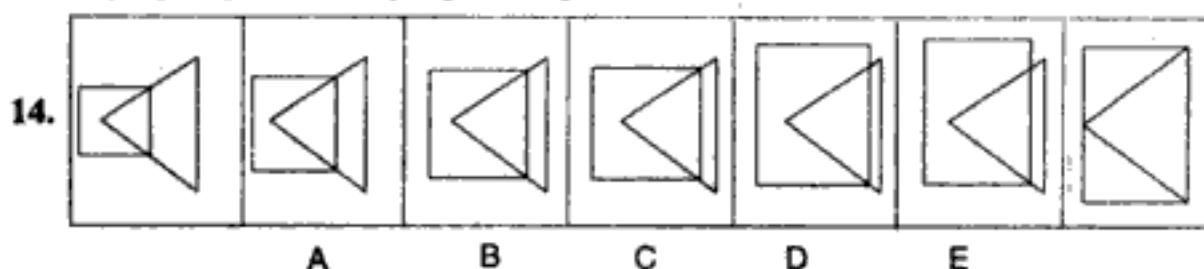
C

D

E

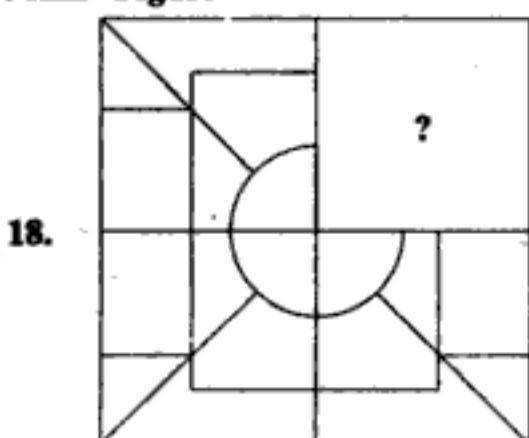


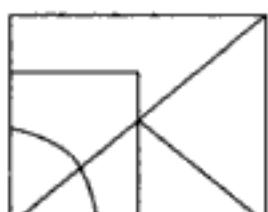
Arranging figures in proper sequence



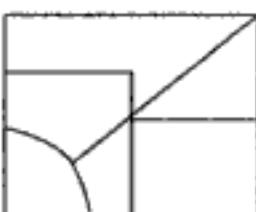
Pattern Completion

Main Figure



Answer Choices

A



B



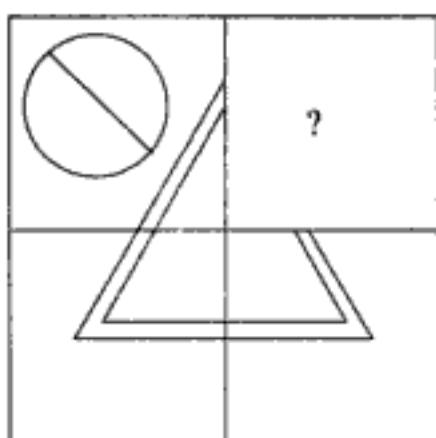
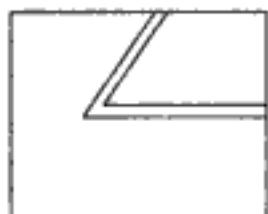
C



D

Main Figure

19.

**Answer Choices**

A



B



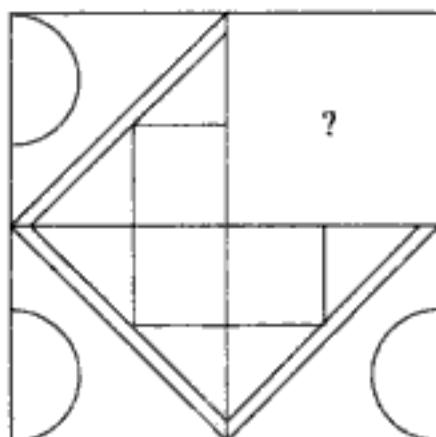
C



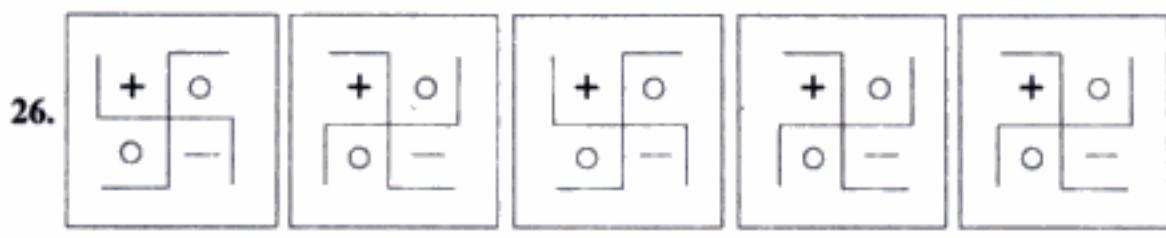
D

Main Figure

20.



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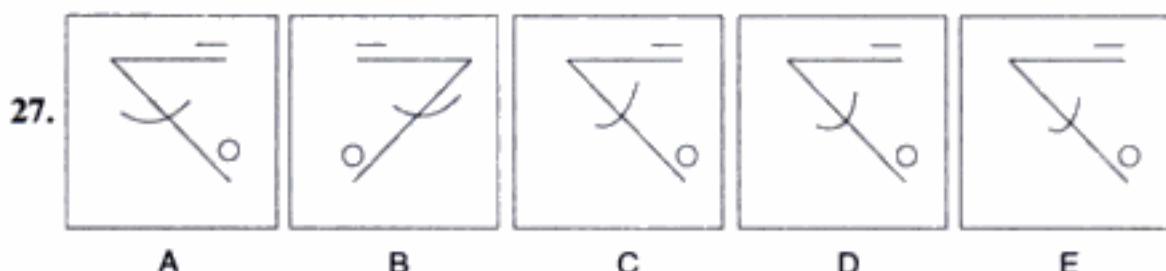
A

B

C

D

E



A

B

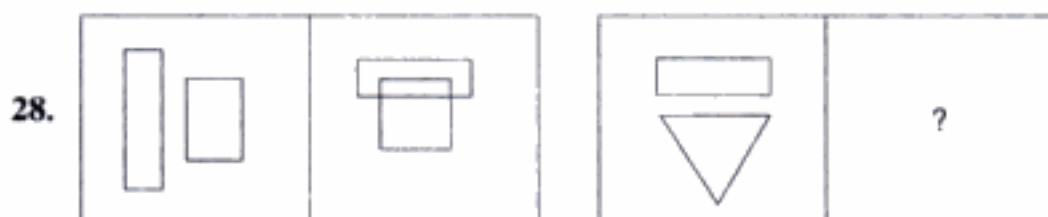
C

D

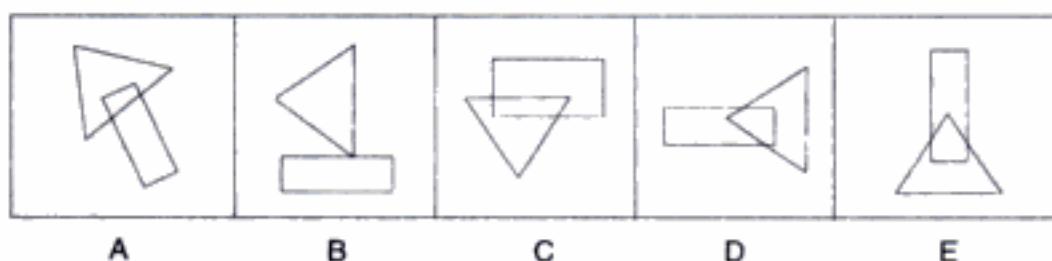
E

Analogical Non-Verbal Reasoning

Problem Figure



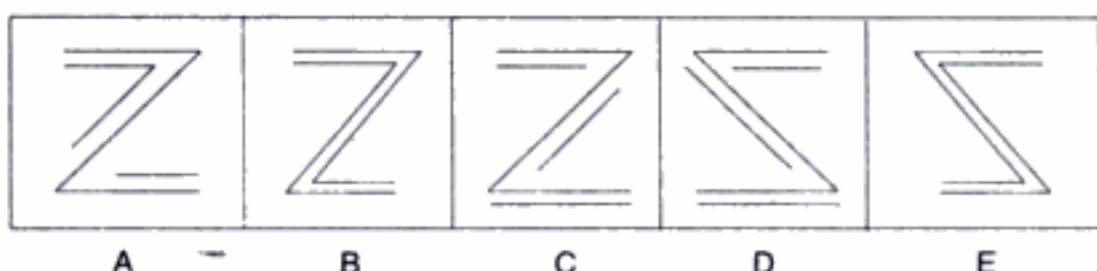
Answer Choices



Problem Figure

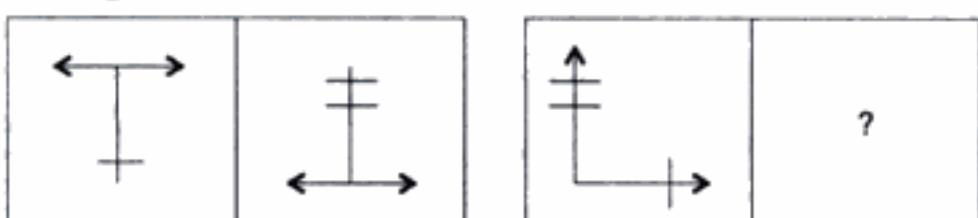
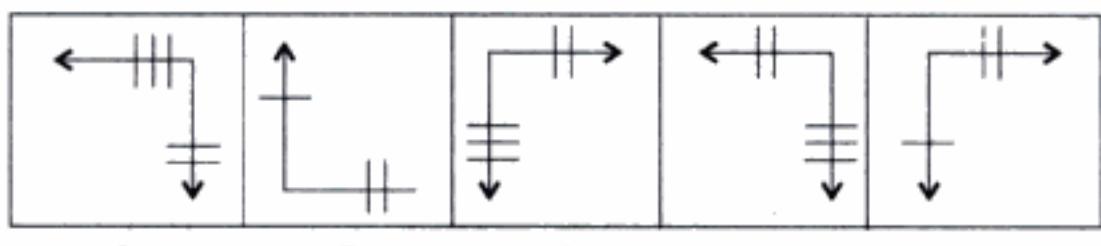


Answer Choices

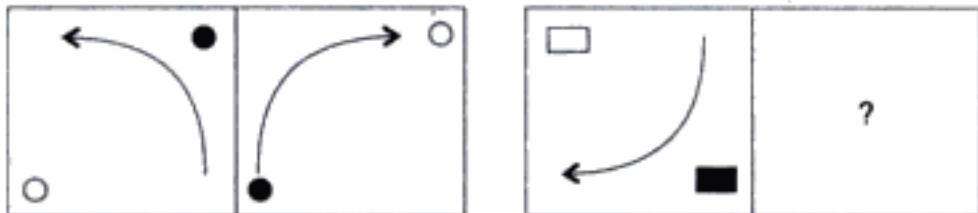
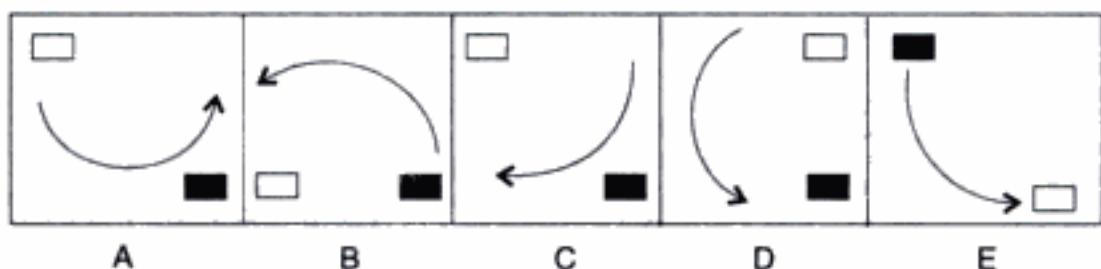


Problem Figure

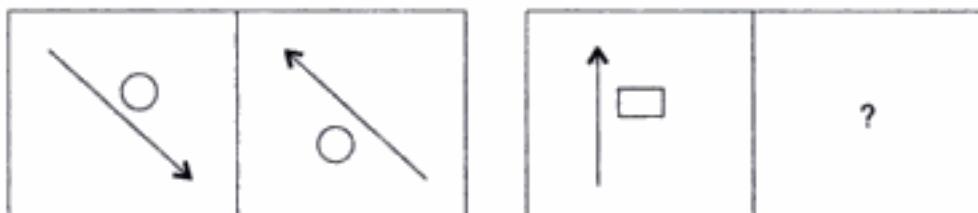
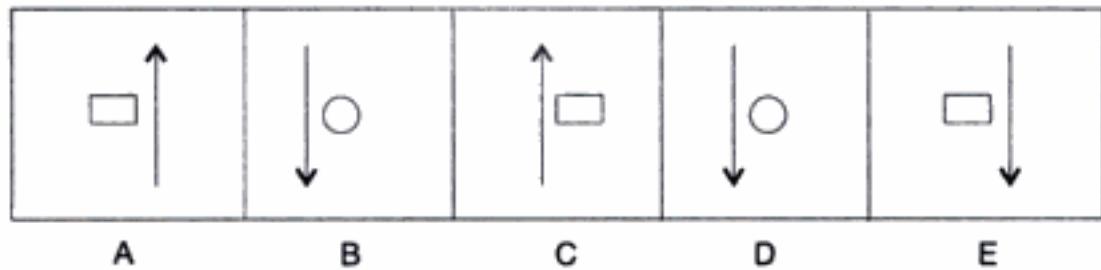
30.

**Answer Choices****Problem Figure**

31.

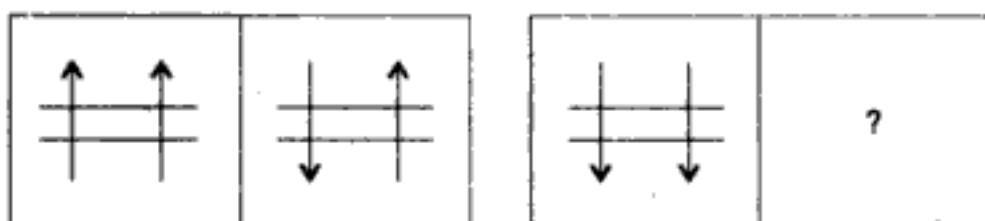
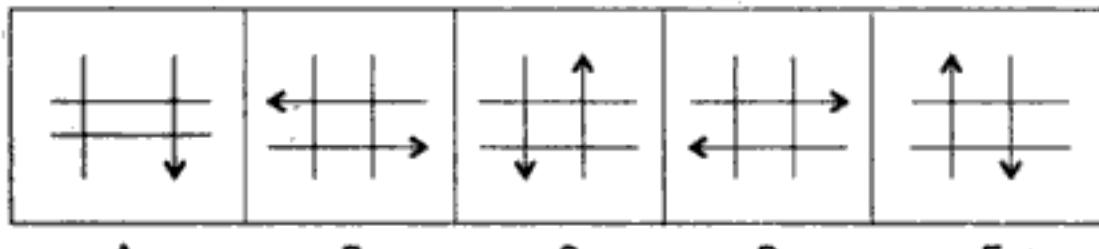
**Answer Choices****Problem Figure**

32.

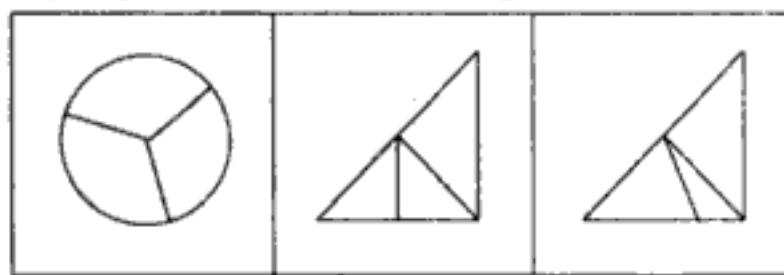
**Answer Choices**

Problem Figures

33.

**Answer Choices****Grouping of Identical Figures**

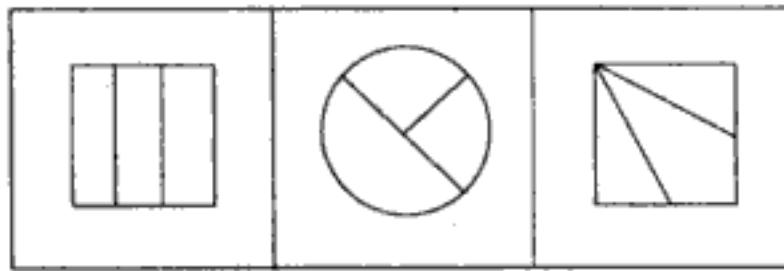
34.



(1)

(2)

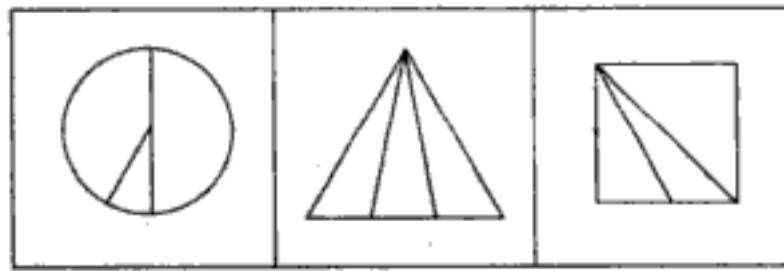
(3)



(4)

(5)

(6)



(7)

(8)

(9)

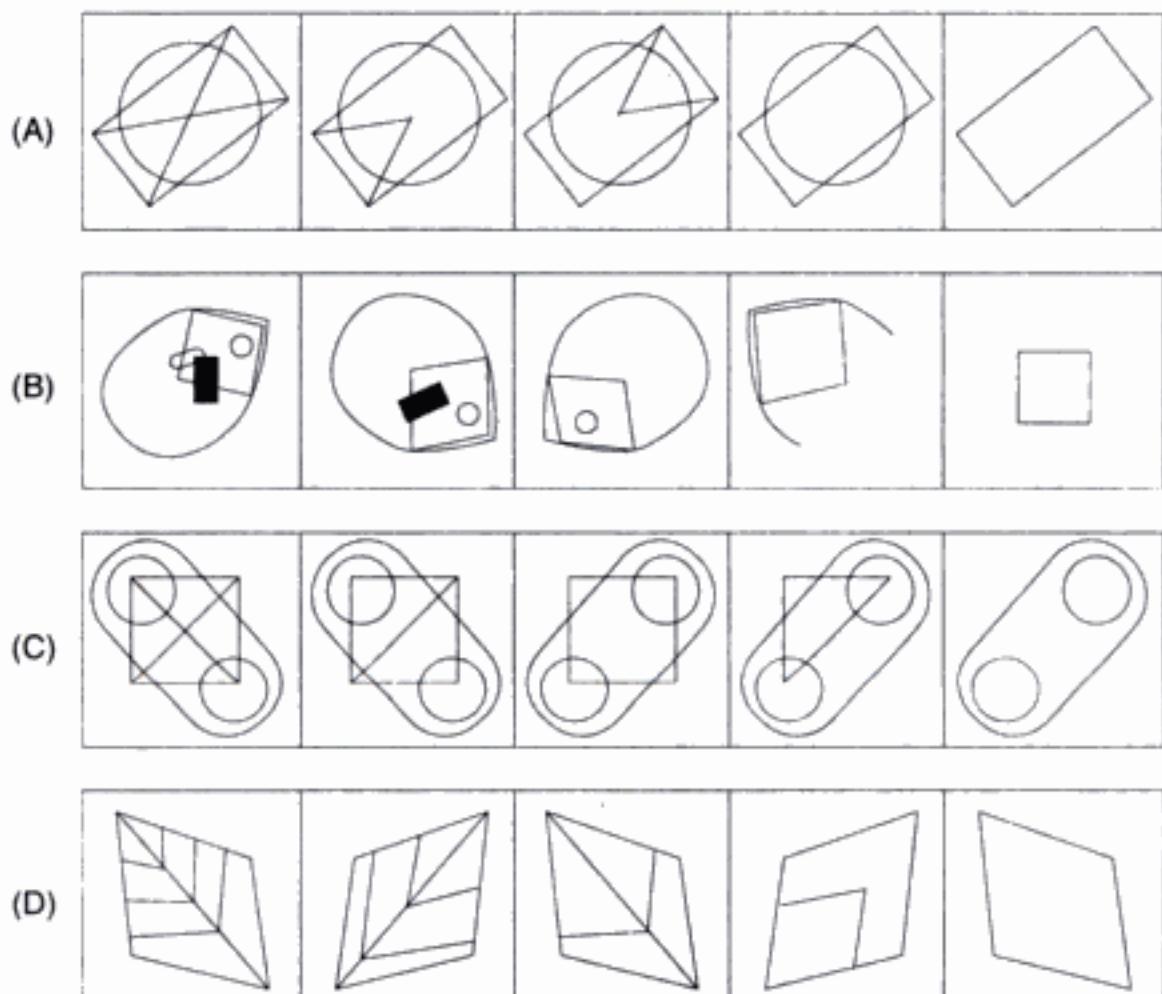
- (a) 1, 5, 7; 2, 3, 8; 4, 6, 9 (c) 3, 7, 6; 1, 8, 4; 2, 5, 9
 (b) 1, 4, 9; 2, 5, 6; 3, 7, 8 (d) 1, 2, 6; 3, 4, 5; 7, 8, 9

35. $1 : 7 :: \blacktriangle : ?$

- (A) (B) (C) (D)

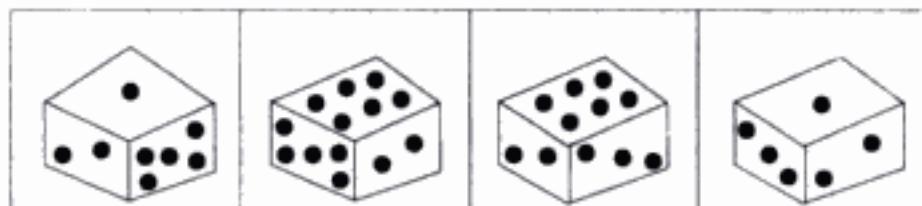
Application of Given Rules to a Set of Figures

The complex figure become basic along a row. The change takes place step by step with only one change at a time. Choose the row in which the figure becomes most simpler (basic) as you move from one column to another.



Direction: Below are depicted the four different positions of a dice. Find the number of dots on the face opposite to the face with one dot.

36.



(A) 3

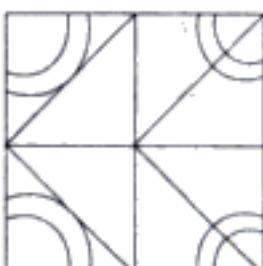
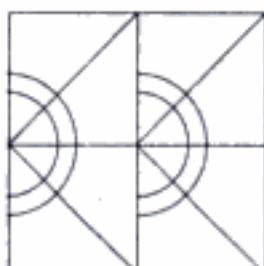
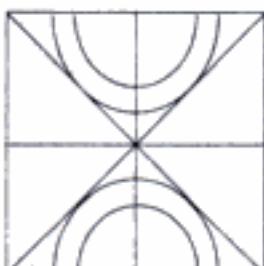
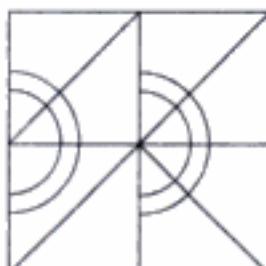
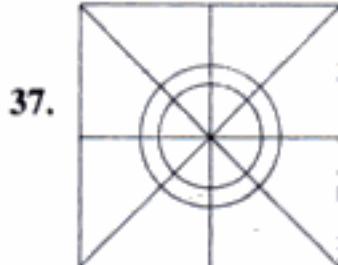
(B) 6

(C) 2

(D) 5

Pattern Rearrangement

In the questions that follow, select from the answer figures, the one that can be rearranged to form the main figure.



(A)

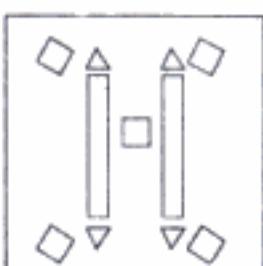
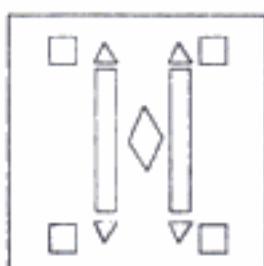
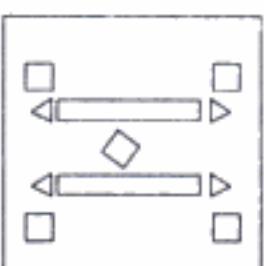
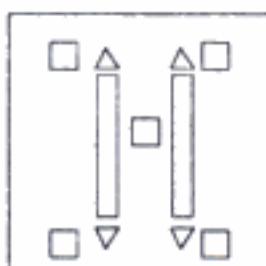
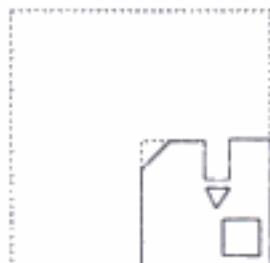
(B)

(C)

(D)

Paper Cutting

38.



(A)

(B)

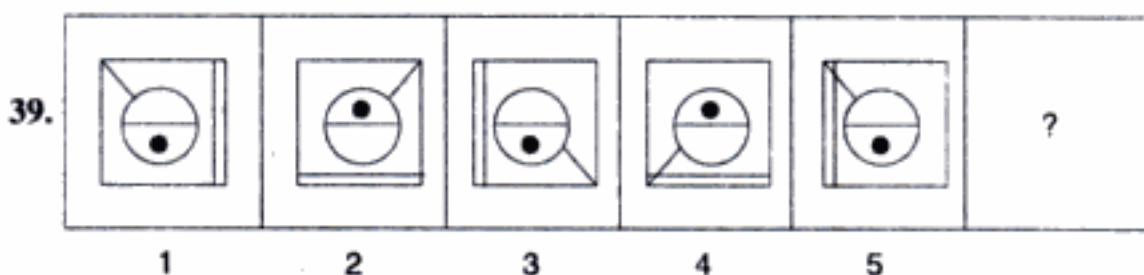
(C)

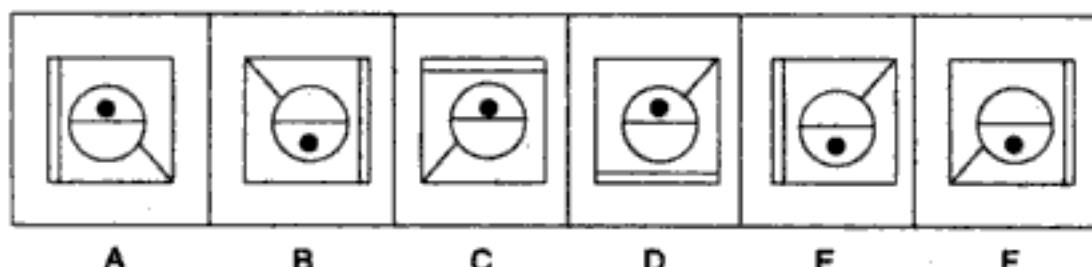
(D)

Completing the Series

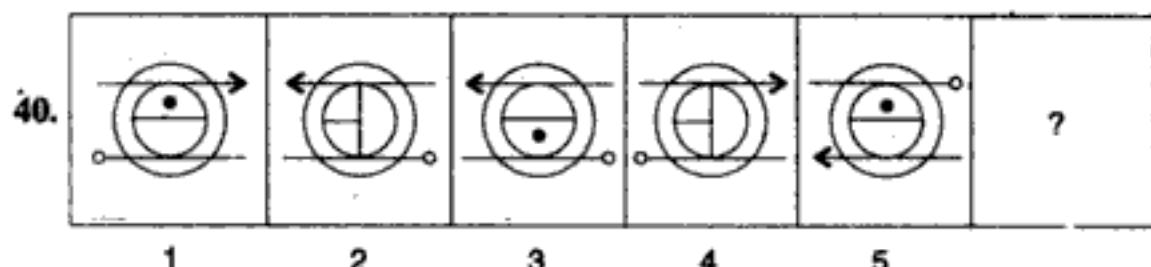
Name the serial number of the figure in the answer figures which will complete the series, i.e. fit in the last column of the problem figures.

Problem Figures

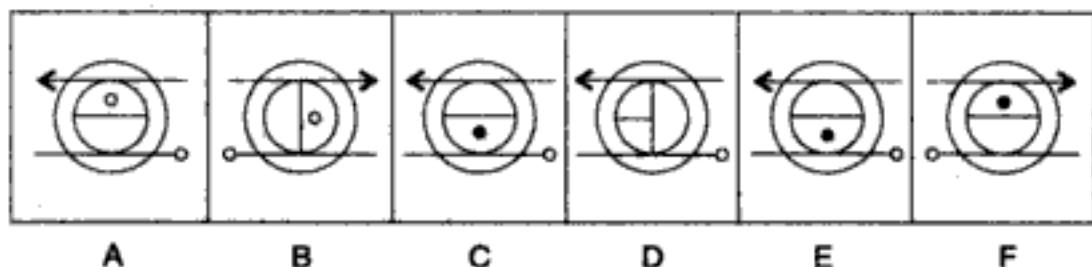


Answer Figures

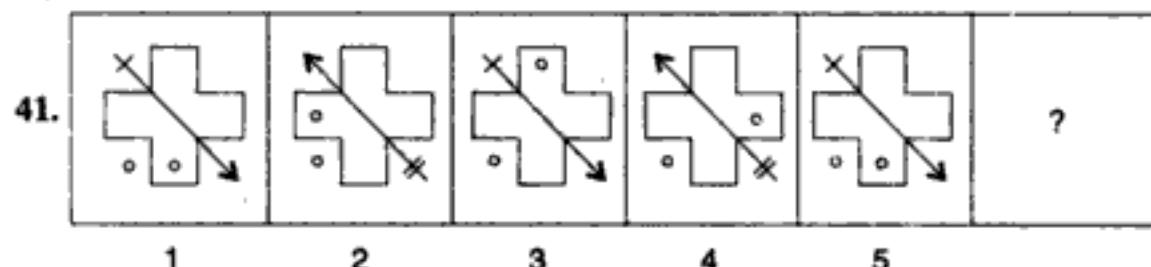
A B C D E F

Problem Figures

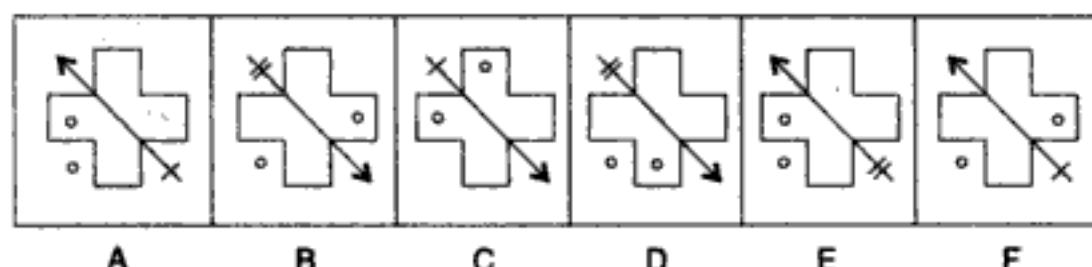
1 2 3 4 5

Answer Figures

A B C D E F

Problem Figures

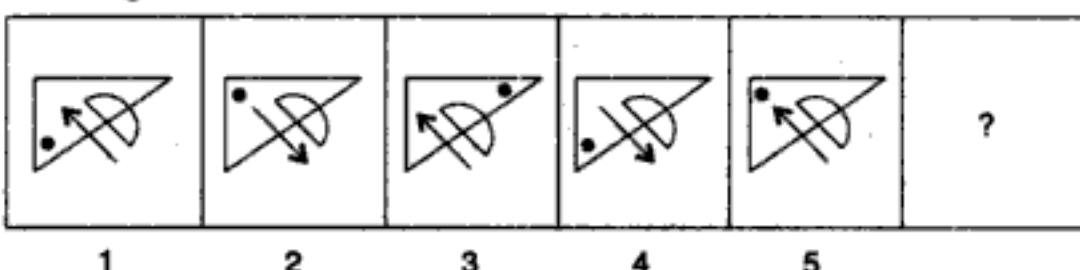
1 2 3 4 5

Answer Figures

A B C D E F

Problem Figures

42.



1

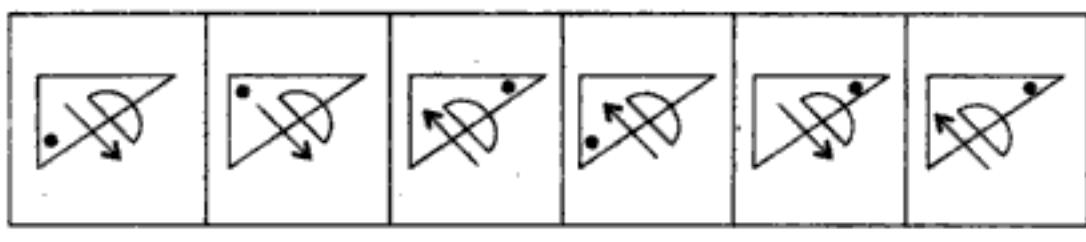
2

3

4

5

?

Answer Figures

A

B

C

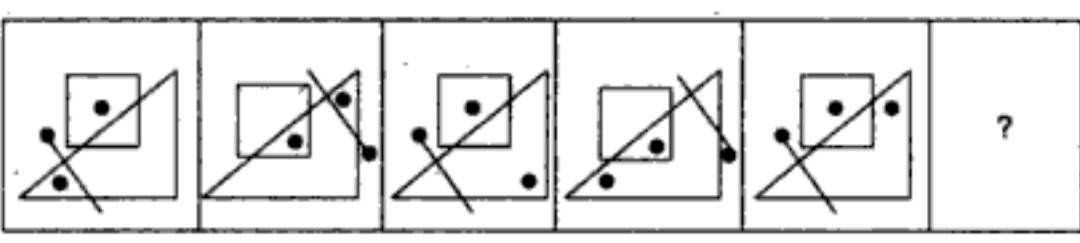
D

E

F

Problem Figures

43.



1

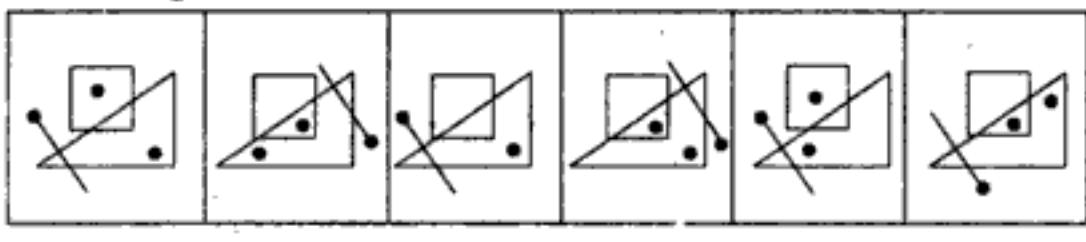
2

3

4

5

?

Answer Figures

A

B

C

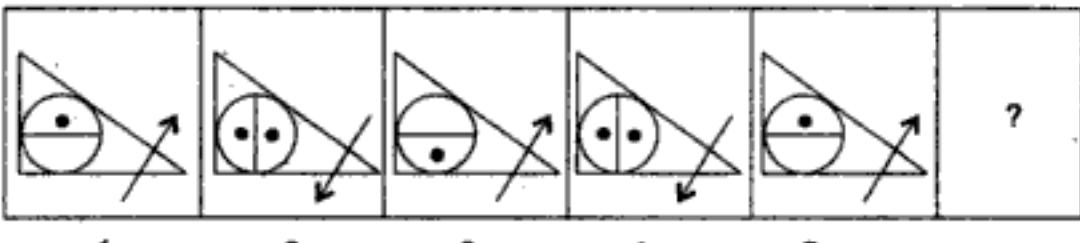
D

E

F

Problem Figures

44.



1

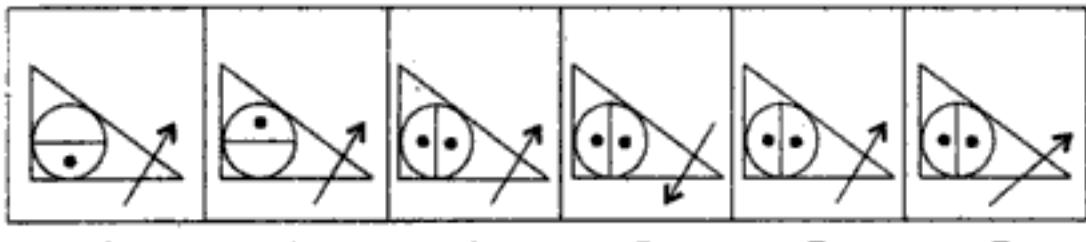
2

3

4

5

?

Answer Figures

A

B

C

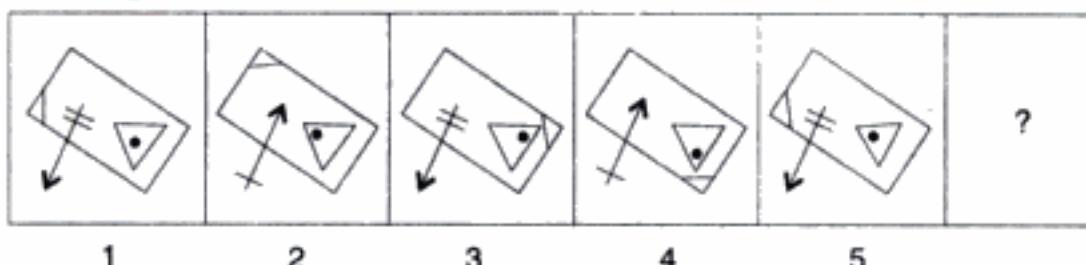
D

E

F

Problem Figures

45.



1

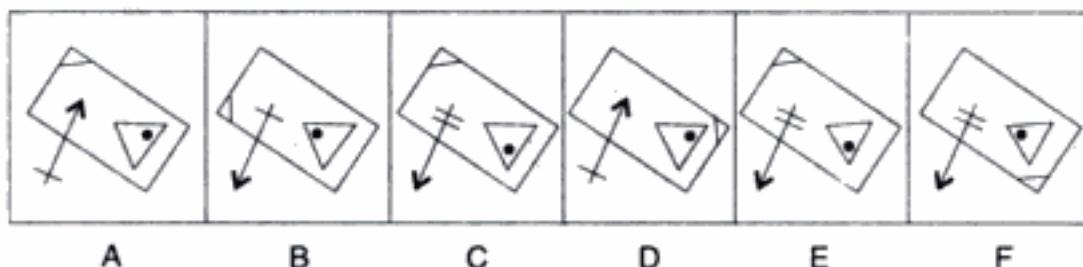
2

3

4

5

?

Answer Figures

A

B

C

D

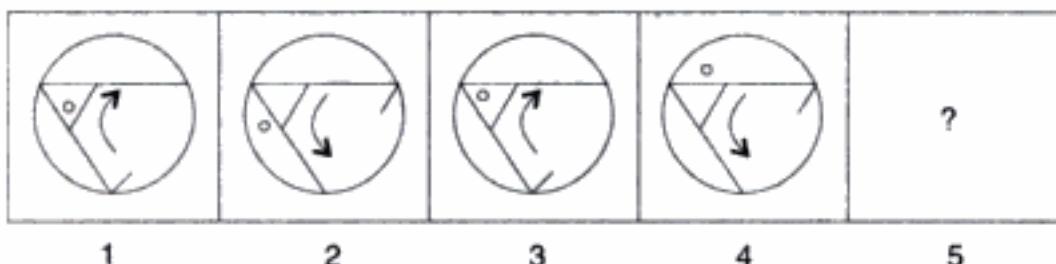
E

F

Series Completion

Which figure in block 2 will fit into column 5 of Block A to complete the series:

46.



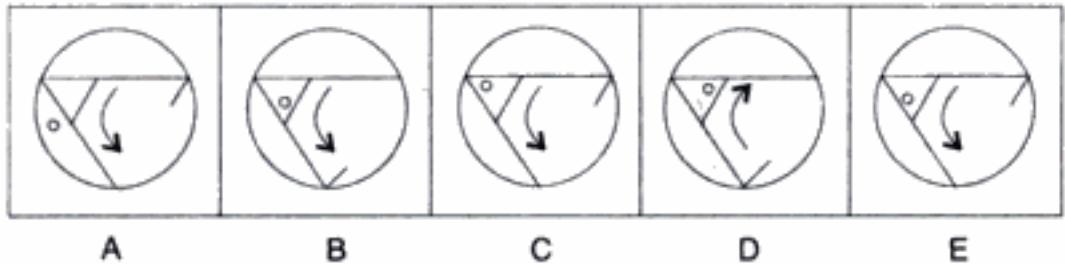
1

2

3

4

5



A

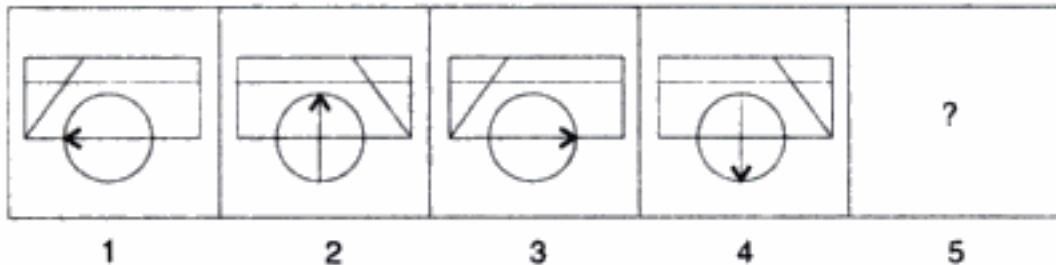
B

C

D

E

47.



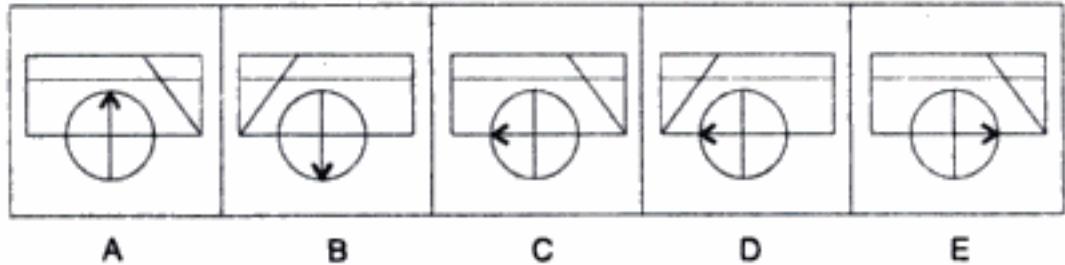
1

2

3

4

5



A

B

C

D

E

Hidden page

Hidden page

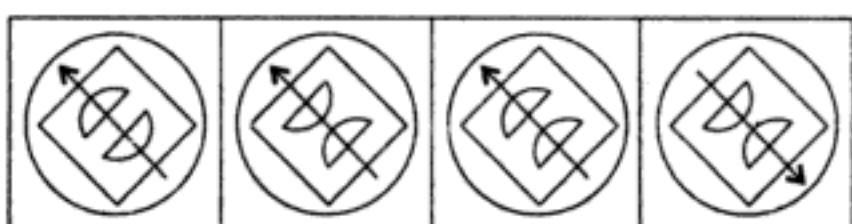
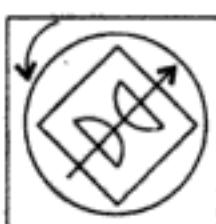
32. E The arrows change direction and the small ball and small box change position around the arrows.
33. E One arrow (left side one) changes direction.
34. C There are three types of figures which are
 — equally divided (1, 8, 4)
 — divided as 50%, 25%, (2, 5, 9)
 — having these totally different divisions (3, 7, 6)
35. D One line becomes two lines: (7) is made of two lines, one triangle becomes therefore two triangles (A square or rhombus is made by joining two triangles).
36. (B) 37. (C) 38. (C)
39. D The circle in the square is involving around the squares along with a like in clockwise direction. The dot in the circle is moving up and down from figure to figure. The square is having a double line in the first figure which is vertical and then in next figure it becomes horizontal. Keeping the above correlation of movement of circle with line, movement of dot in the circle and horizontal and vertical line movement in succession, the answer figure D best completes the series.
40. D Note the direction of arrows on top and pins at the bottom of the circle changing from one figure to the next and repeating the same pattern in all columns. The small circle inside has a horizontal line and a dot on top. The dot moves up and down in each column in which only the horizontal line appears. Where there is no dot, there is a vertical line met midway by a half horizontal line. The answer figure D completes the series keeping the above parameters in sequence.
41. E Note the changing direction of arrow and the dot inside and outside. There is a similarity of pattern and its change alternatively. Hence, answer figure E is the correct choice to complete the series.
42. E Note movement of dot from one angle of the triangle to the other and the direction of the arrow cutting across. The dot is moving in clockwise direction from one angle to the other and the arrow pointing once inside and once outside the triangle. Answer figure E fits in problem column to complete the series.

43. D Note movement of dot in triangle clockwise from one angle to another. The second dot in the square is moving in and out of the triangle. The line with dot (pin) is also moving in a regular pattern from one figure to the other. Figure D of answer column fits in blank column in problem figure.
44. D Note the change of direction of line inside the circle in the triangle and the number of dots in the circles and movement of the dot in circles having vertical line across. Answer figure D best completes the series.
45. A Note movement of arrow inside/outside the rectangular figure, movement of dot inside the triangle and the small line moving from one corner to the other. Answer figure A follows the pattern and completes the series based on the analogy of preceding figures of problem column.
46. D Note direction of arrows, movement of dot from column to column in block 1 and in alternate columns, the small line across the end of the main figure is changing. Following this pattern, Answer figure D fits well in the empty space.
47. D Note movement of arrow changing clockwise in the circle. The line making triangular figure on the top corner of the rectangular figure is changing alternatively in each column of block 1. Based on this sequence, Answer figure D correctly completes the series.
48. D 49. A 50. C

Hidden page

Figure Rotation

5.



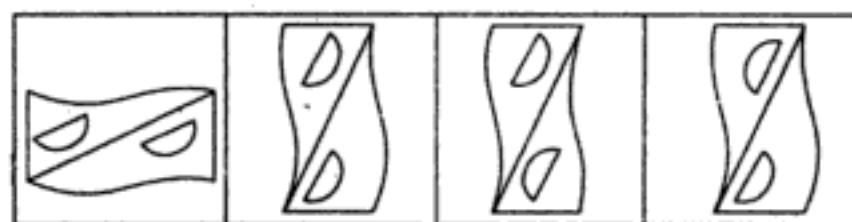
A

B

C

D

6.



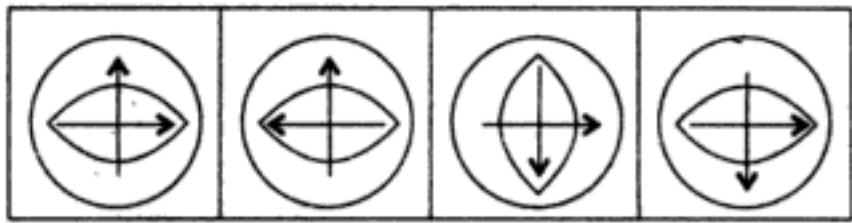
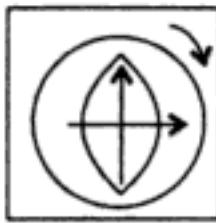
A

B

C

D

7.



A

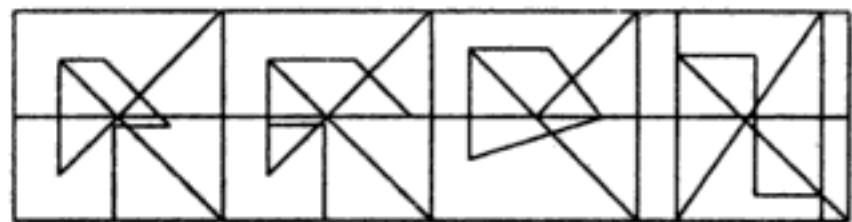
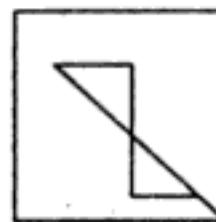
B

C

D

Directions: (Please pick instructions of Illustrations on page 50)

8.



(X)

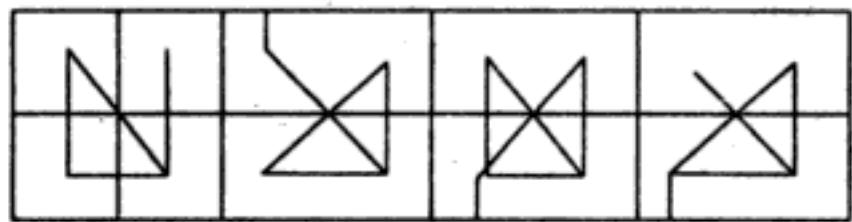
A

B

C

D

9.



(X)

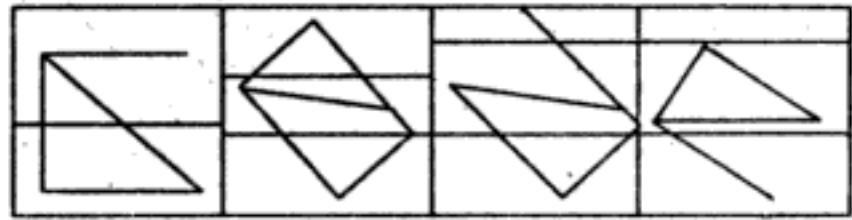
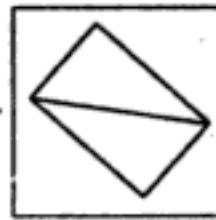
A

B

C

D

10.



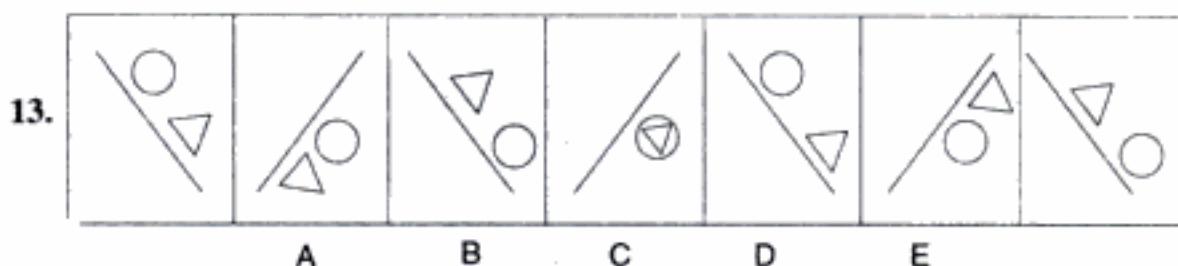
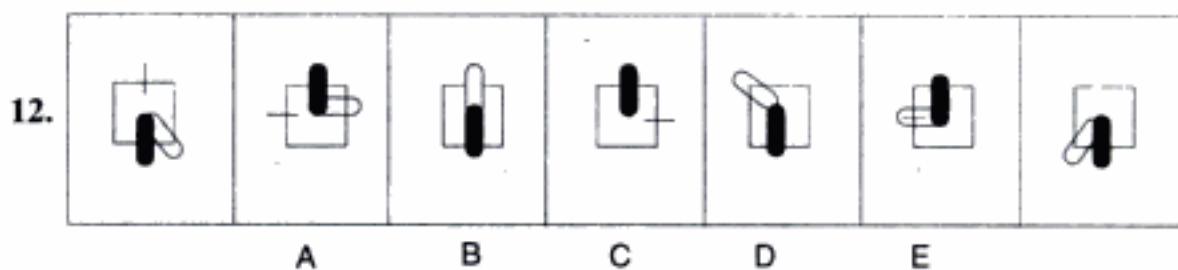
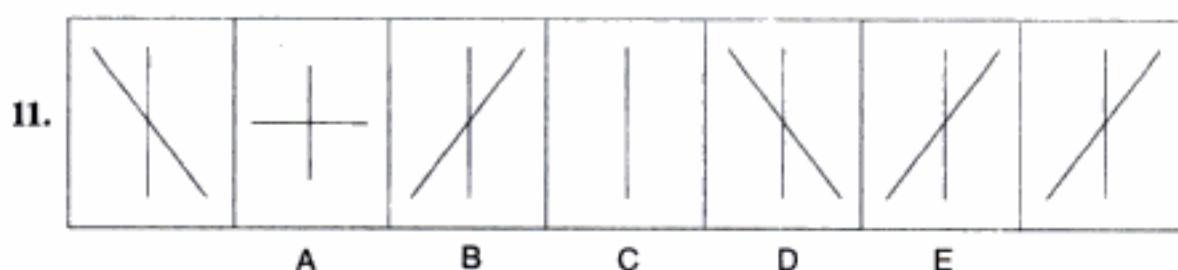
(X)

A

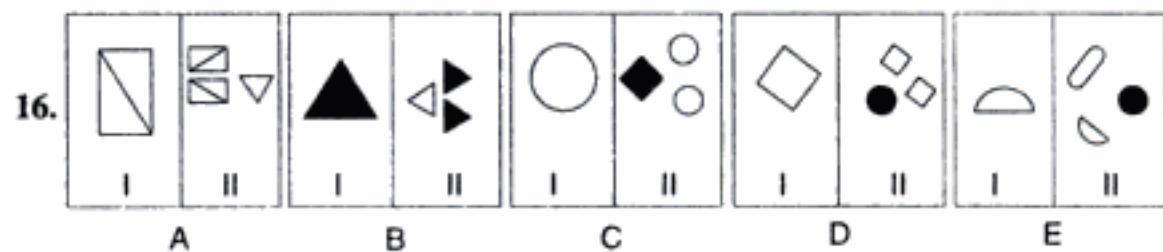
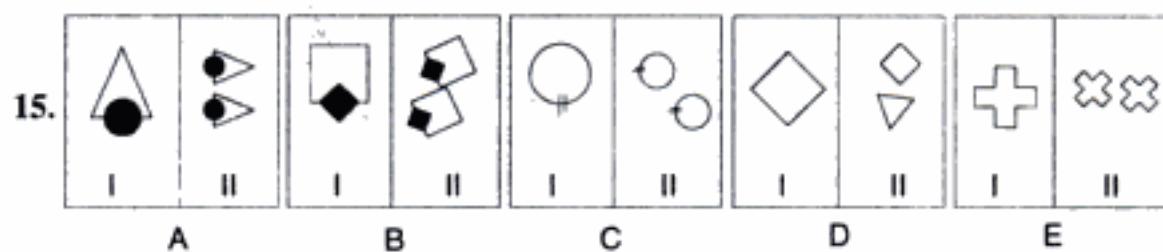
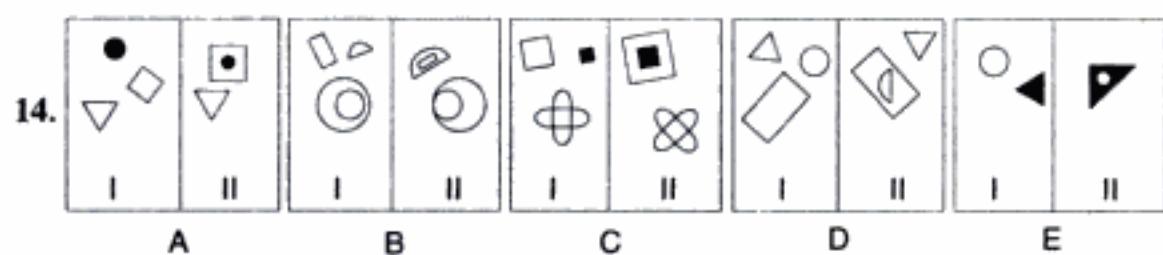
B

C

D

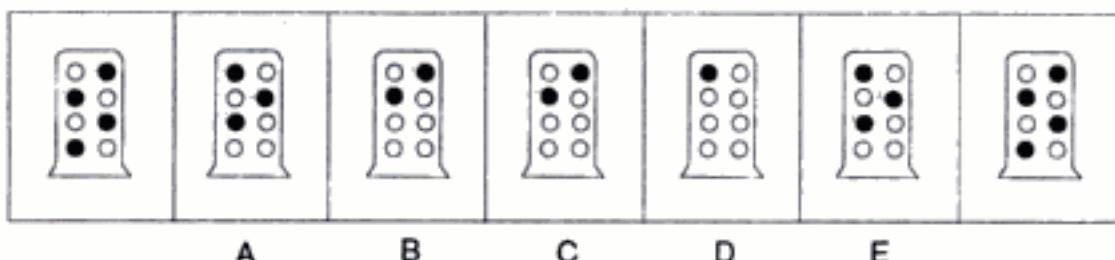
Detection of Figure Out of Series**Pattern Comparison**

Directions: In each of the following questions, in 4 out of the 5 figures is related to element II in the same particular way. Find out the figure the element I is not so related to element II:

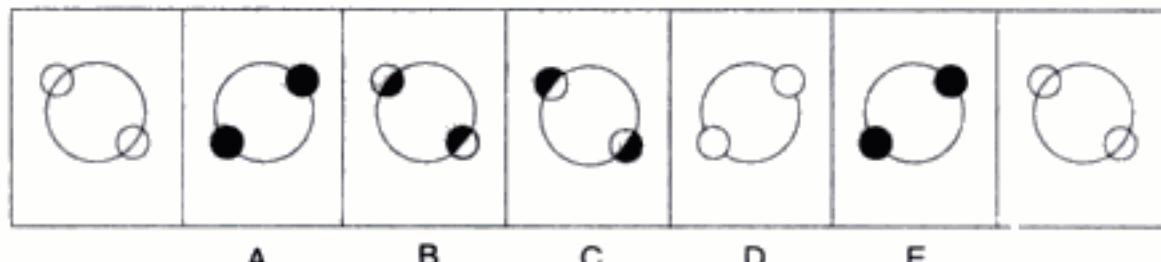


Arranging Figures in Proper Sequence

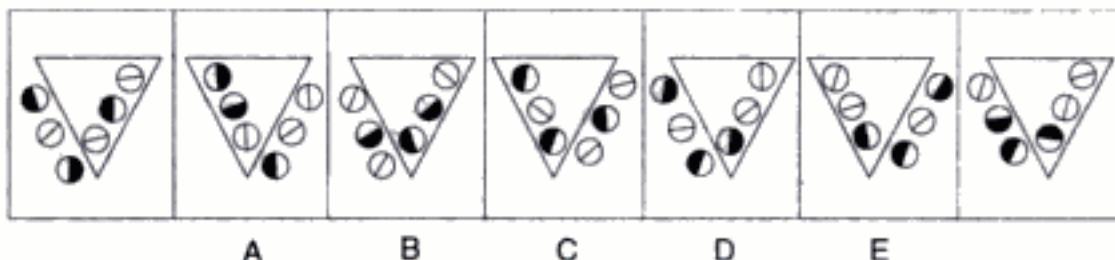
17.



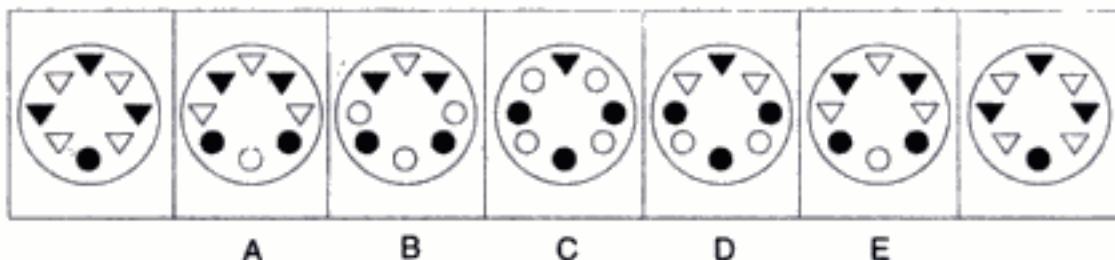
18.



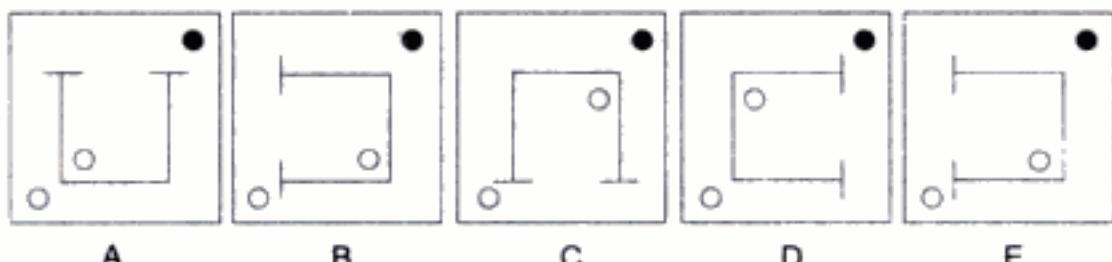
19.



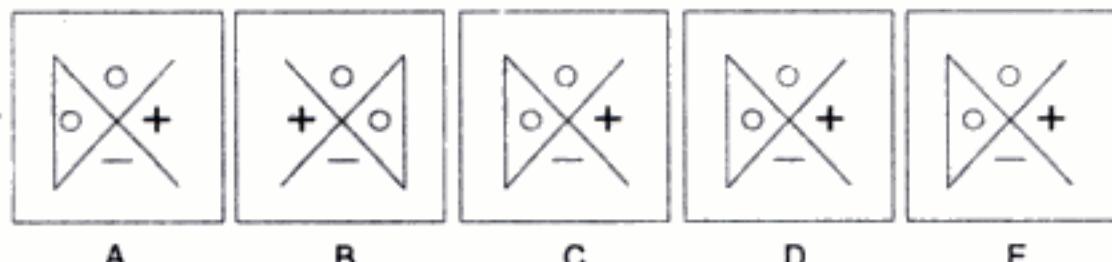
20.

**Classification**

21.



22.

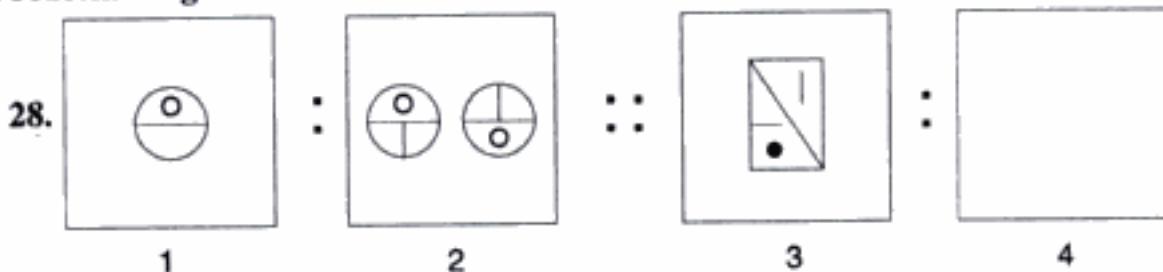


- 23.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D E
- 24.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D E
- 25.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D E
- 26.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D E
- 27.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D E

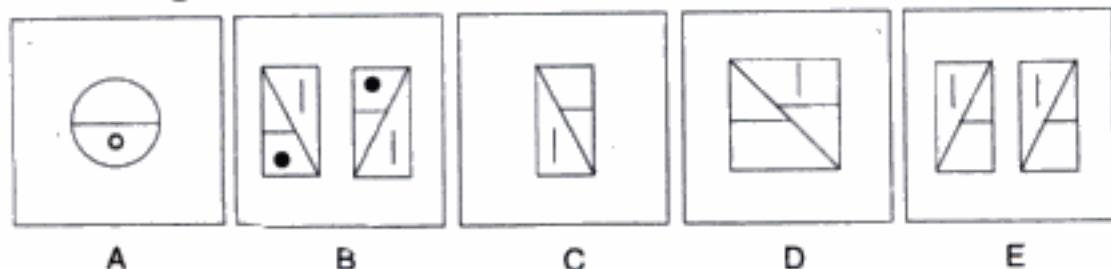
Analogical Non-Verbal Reasoning

Find the relationship/analogy in the first set (2 figures) of Problem Figures. Based on the same analogy, find the suitable figure from Answer Figures to fit in the blank space in the following questions:

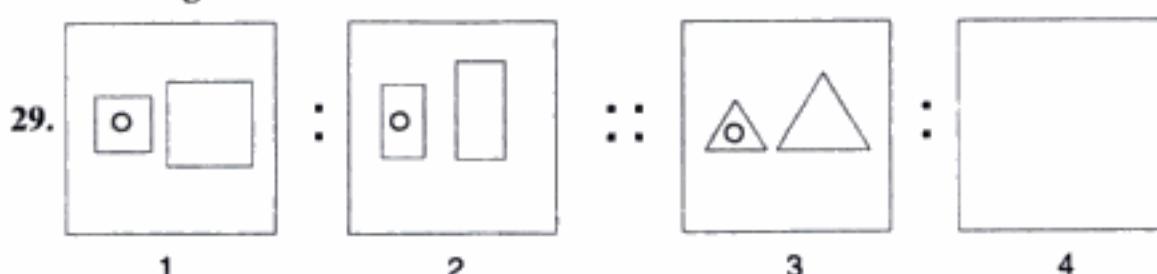
Problem Figures



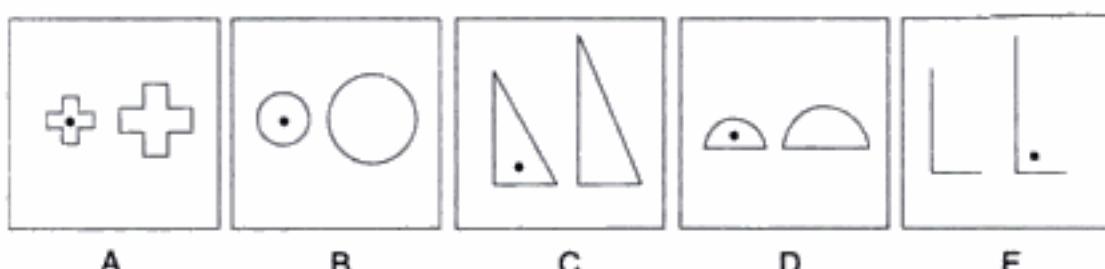
Answer Figures



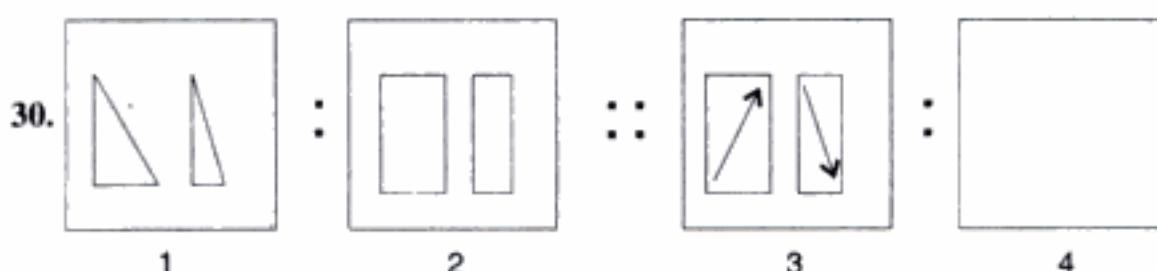
Problem Figures

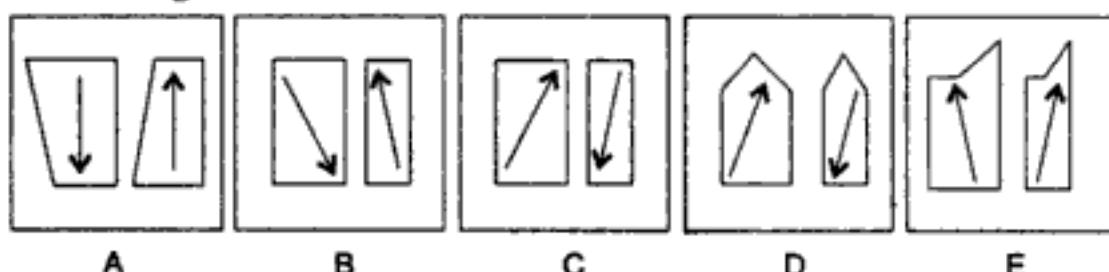


Answer Figures

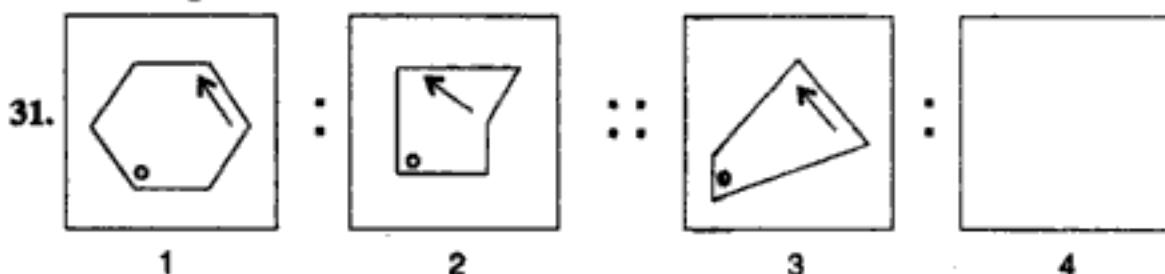


Problem Figures

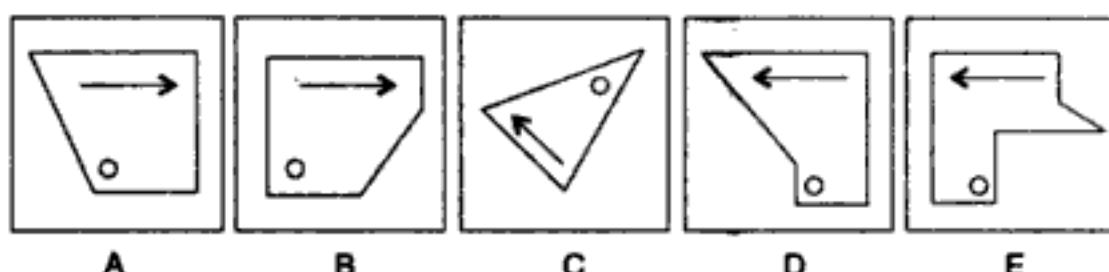


Answer Figures

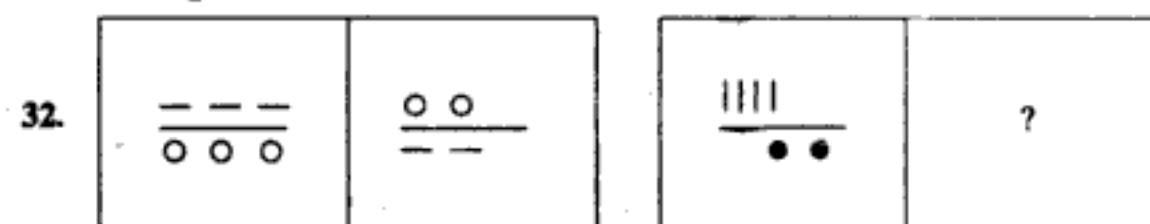
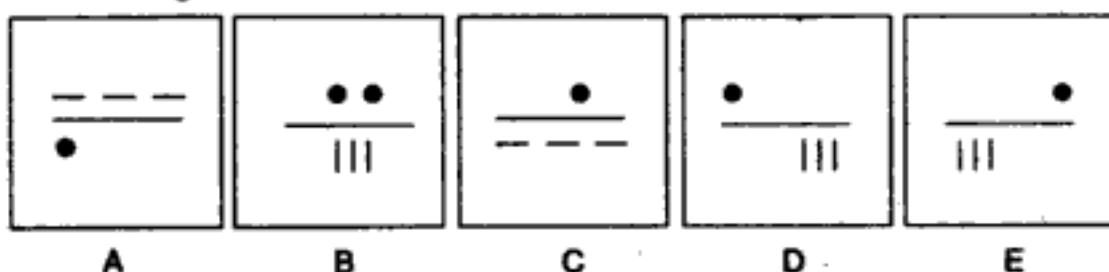
A B C D E

Problem Figures

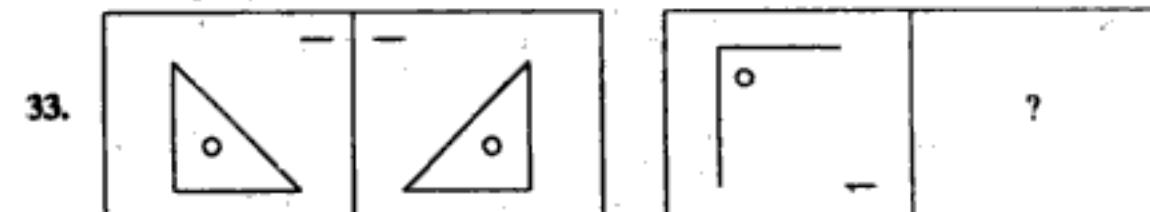
1 2 3 4

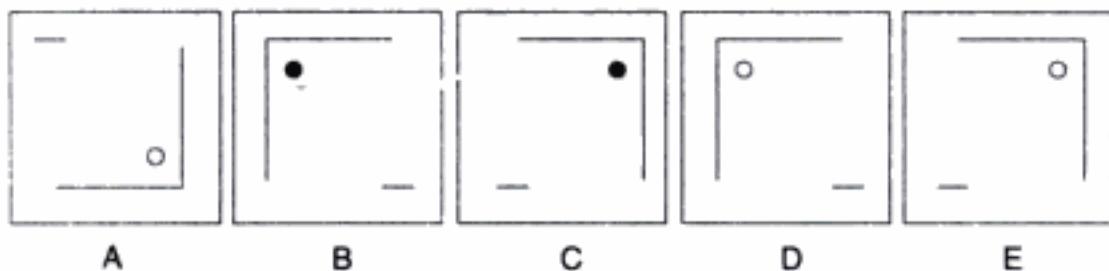
Answer Figures

A B C D E

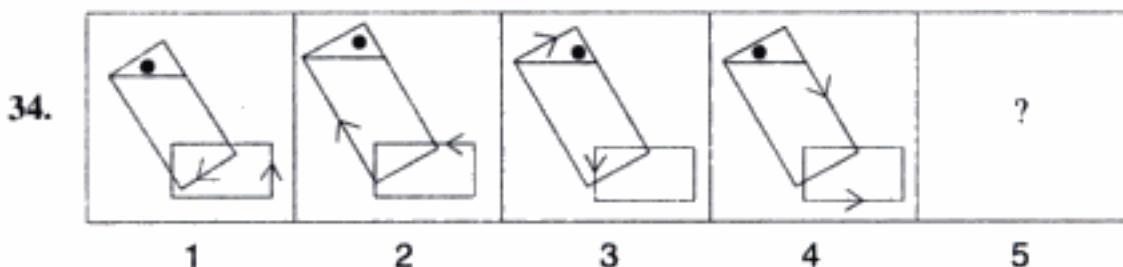
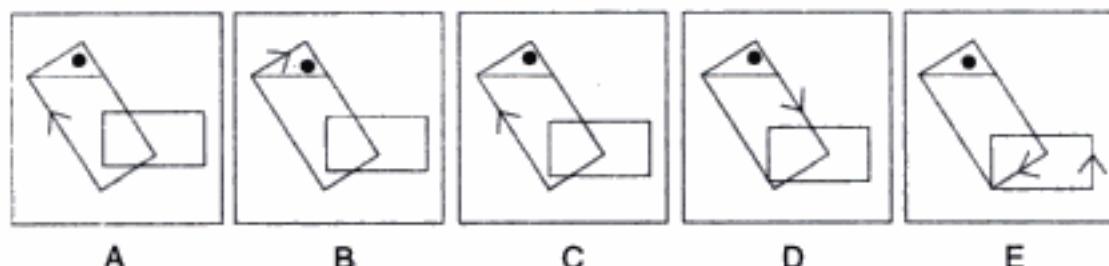
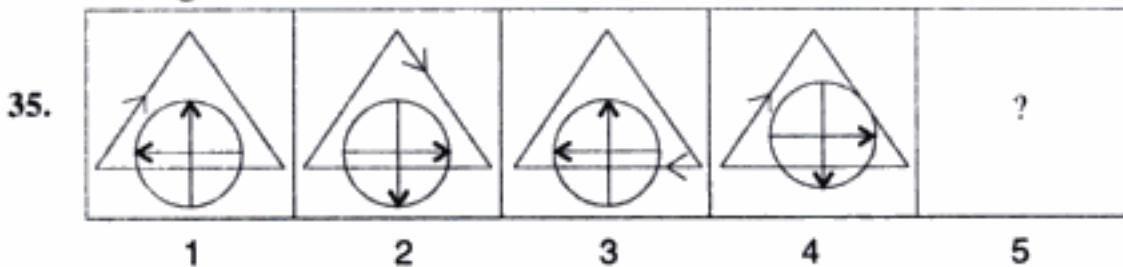
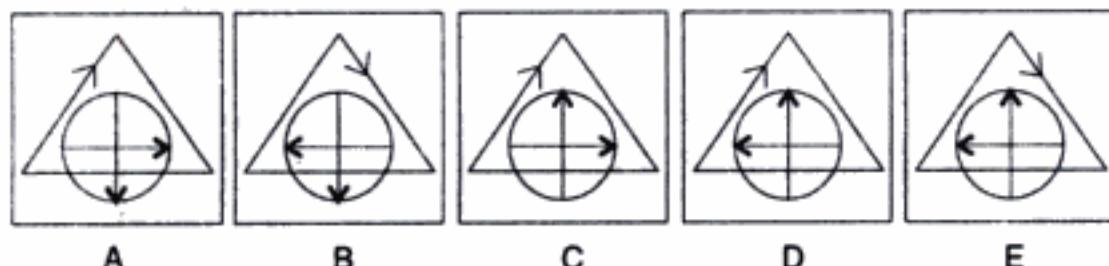
Problem Figures**Answer Figures**

A B C D E

Problem Figures

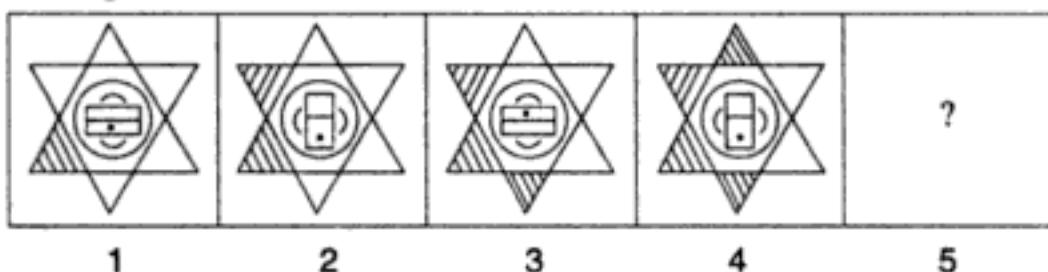
Answer Figures**Completing the Series**

Directions: For each of the following questions, the series of diagrams called Problem Figures, consists of figures in a particular sequence. Below the Problem Figure you will find a series of diagrams called Answer Figures which should come at the end of the Problem Figures in the blank square.

Problem Figures**Answer Figures****Problem Figures****Answer Figures**

Problem Figures

36.



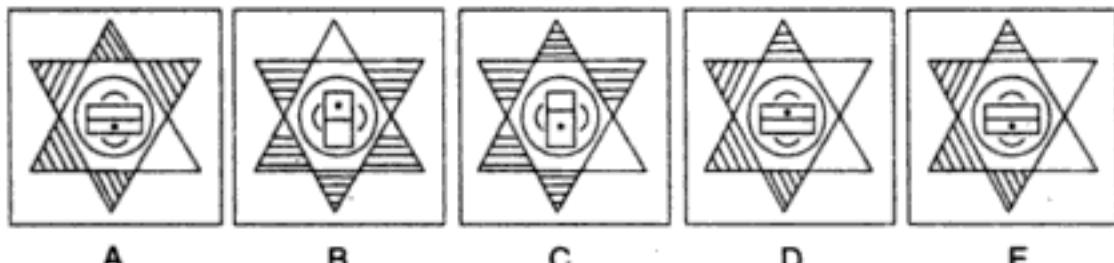
1

2

3

4

5

Answer Figures

A

B

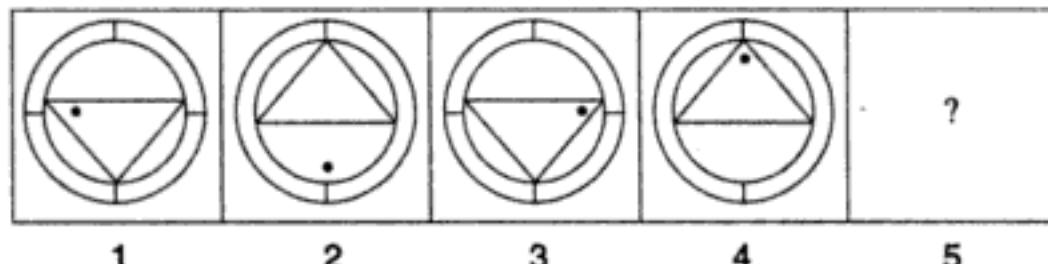
C

D

E

Problem Figures

37.



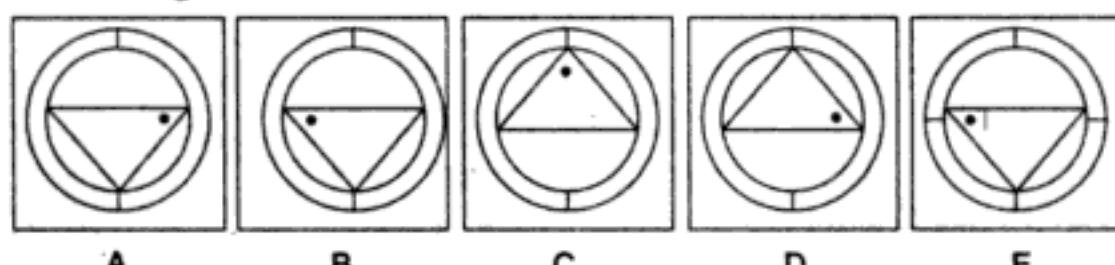
1

2

3

4

5

Answer Figures

A

B

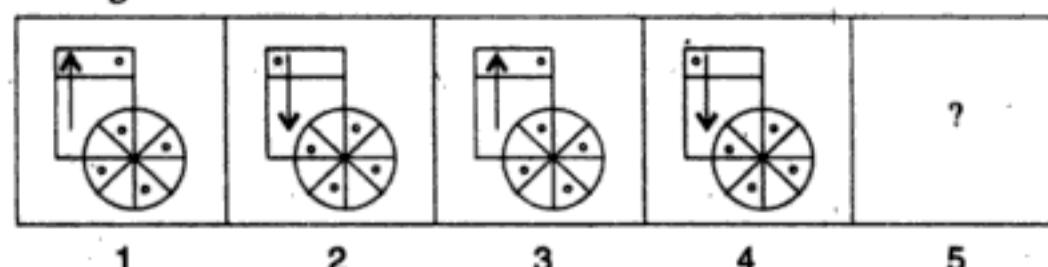
C

D

E

Problem Figures

38.



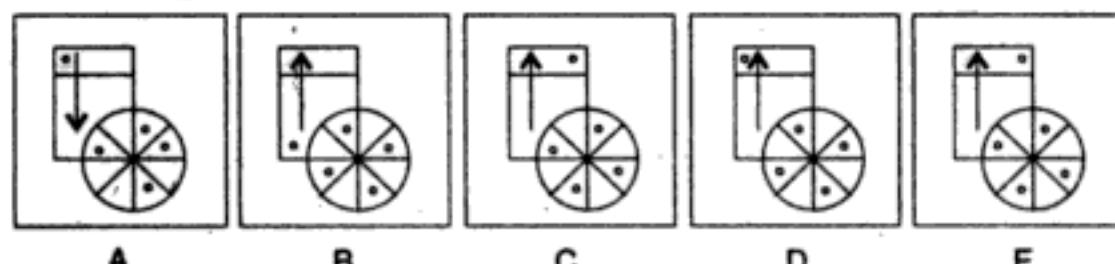
1

2

3

4

5

Answer Figures

A

B

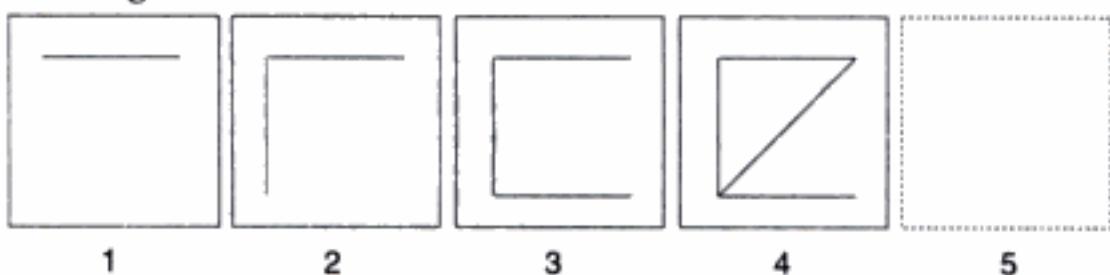
C

D

E

Problem Figures

39.



1

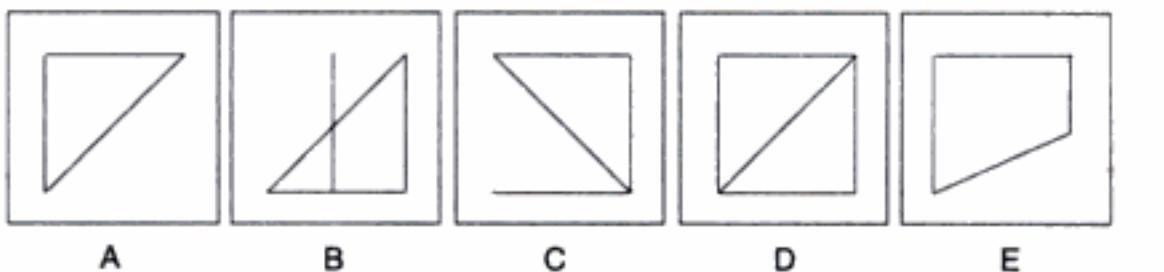
2

3

4

5

Answer Figures



A

B

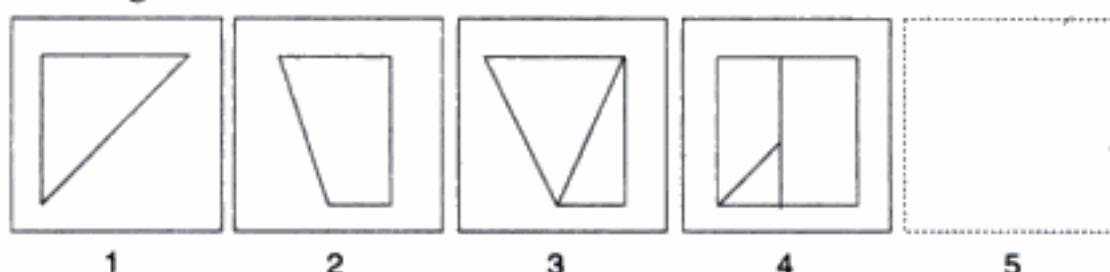
C

D

E

Problem Figures

40.



1

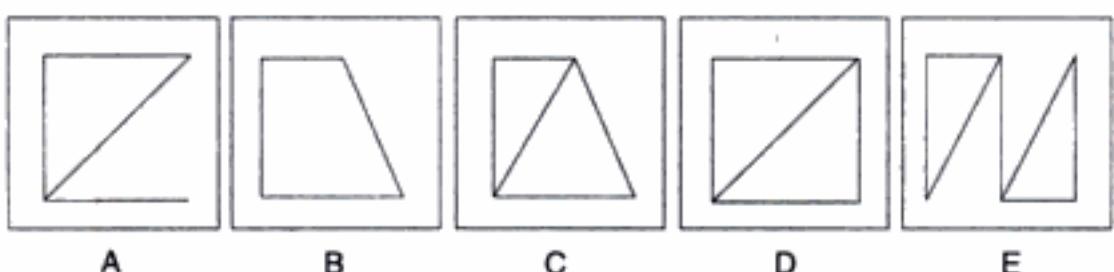
2

3

4

5

Answer Figures



A

B

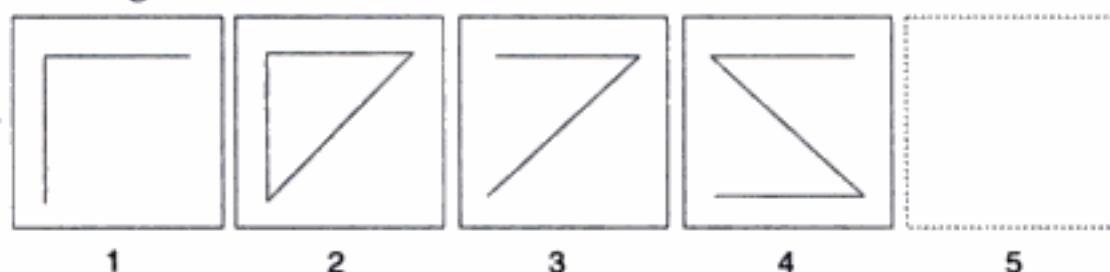
C

D

E

Problem Figures

41.



1

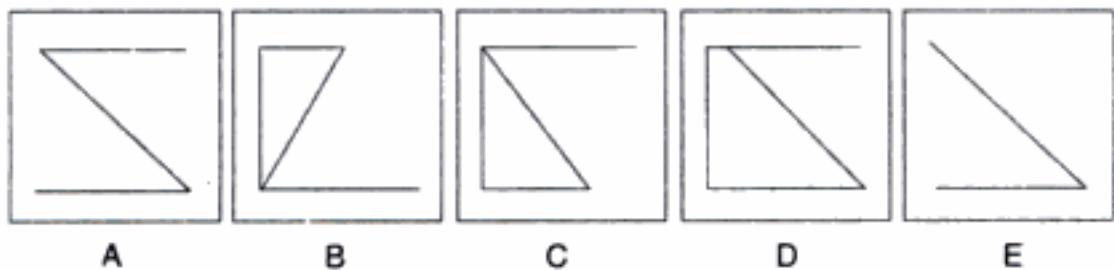
2

3

4

5

Answer Figures



A

B

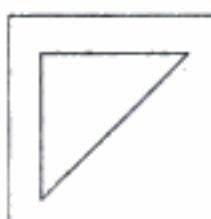
C

D

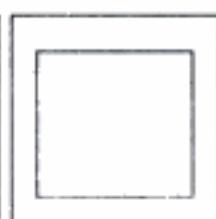
E

Problem Figures

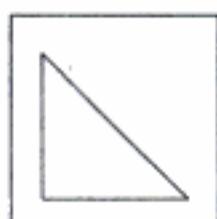
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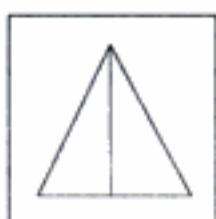
1



2



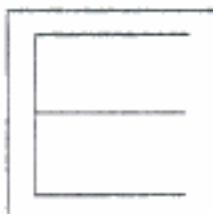
3



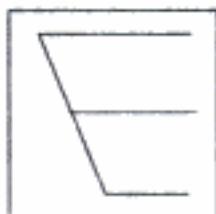
4



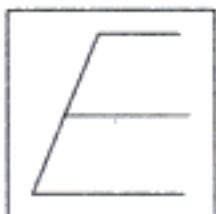
5

Answer Figures

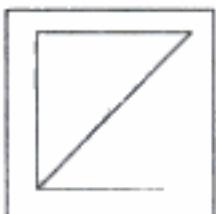
A



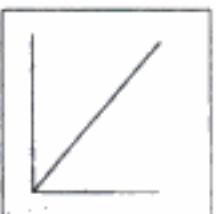
B



C



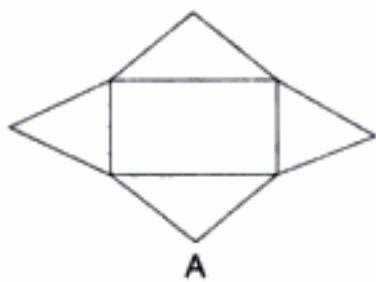
D



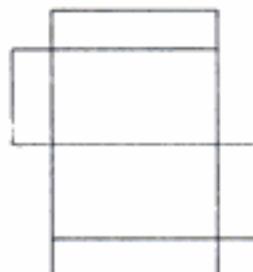
E

Blocks by Folding a Sheet of Paper

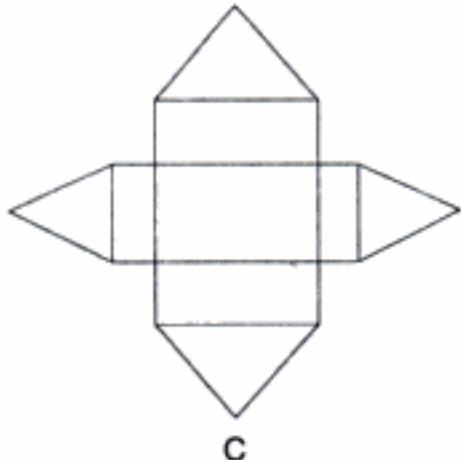
43.



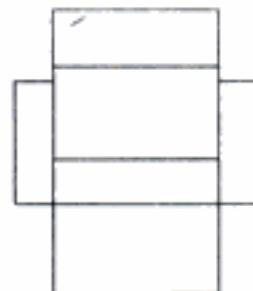
A



B



C

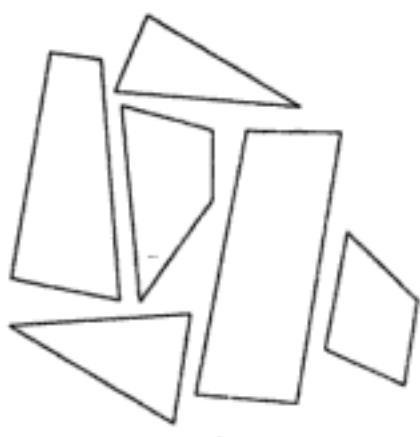
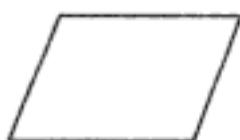


D

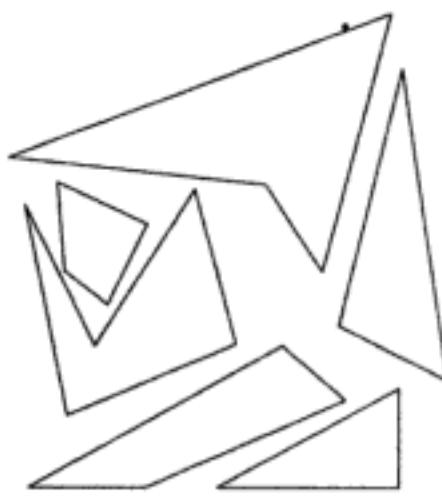
Hidden page

Completing A Given Block from Broken Pieces

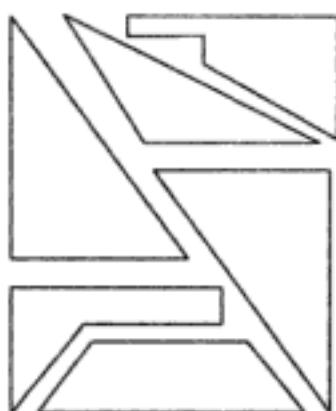
45.



A



B



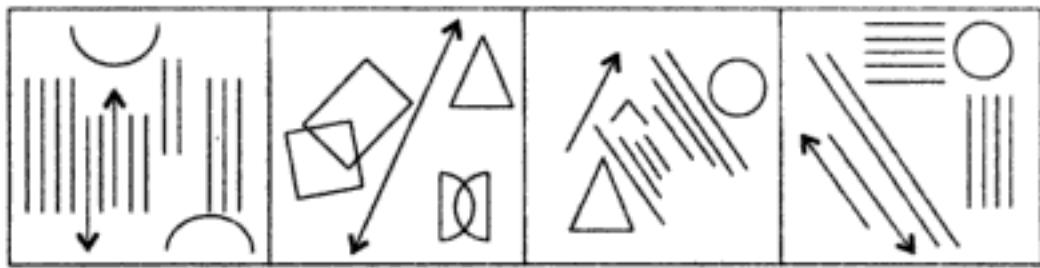
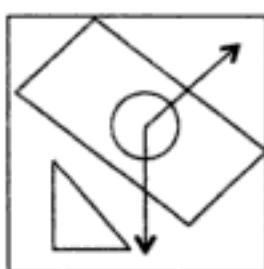
C



D

Making up Key Figures from Given Components

46.



A

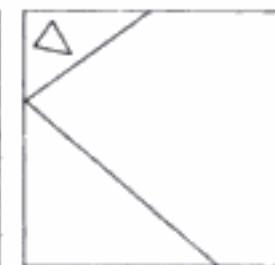
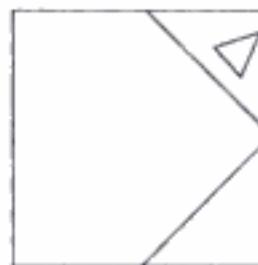
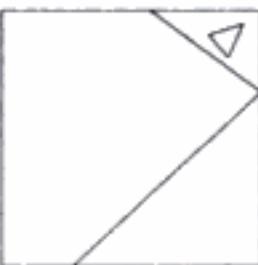
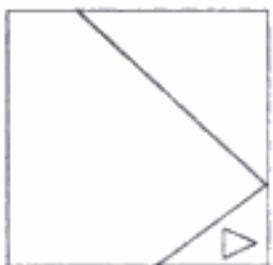
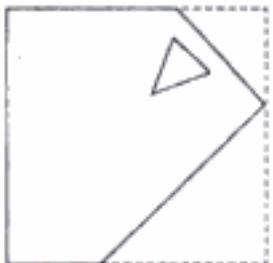
B

C

D

Folded Views of Paper

47.



A

B

C

D

Answers and Explanations

1. A 2. D 3. B 4. E 5. B
6. B 7. D 8. D
9. A and C. In column X, there is the figure of N, and the same is transferable in A and C.
10. D 11. E 12. B 13. B
14. D In each pair, one of the item figures gets enlarged in element II and one of the item figures is enclosed in. Hence in D, either the triangle or the circle should have enlarged to enclose the other. Also, the semicircle is a totally new item being introduced in element II which is peculiar only to D.
15. D In each pair, the element I, there is one large design which in element II reduced in size and becomes two. Hence in D, there should have been two small squares.
16. E In element I of each pair, there is one design which in element II reduces in size becoming two small ones and one new additional item is also added. Hence in E, there should have been two semicircles alongwith a triangular or small ball, etc.
17. C and D 18. C and D 19. B and E
20. B and C

21. E Figure A should be repeated in E as the main figure is turning in anticlockwise direction.
22. D As the main figure is turning from right to left hand side alternatively, figure B should be repeated in D.
23. E The black dot is moving in anticlockwise direction and as such it should be in place of the minus sign.
24. C As the main figure turns from left to right hand side alternately, figure C should face towards the left hand side like in A.
25. E The vertical dash and the small ball exchange places alternately. Hence in figure E, the small ball should be on the left hand side as in A.
26. D As the main figure is turning anticlockwise, in D, the triangle should be on the top left hand side.
27. D The small ball and the plus sign are rotating anticlockwise and are always diagonally opposite each other. In D, it is not so and as such it is odd.
28. B In first two columns, you will note that the number of circles has increased from 1 to 2 and in the second column one of the circles is inverted. Some relation exists in figure 3 of Problem Figures and figure B of Answer Figures.
29. C The correlation is obvious, the triangles have become oblonged like the squares.
30. D Number of lines are increasing in the first two figures. In figure D lines have increased to 5 and direction of arrows also match.
31. C In the first two figures, the number of lines is reducing. Based on this analogy, figure C has the same relationship to figure 3 of Problem Figures. Dot and arrows have no correlation here.
32. E Small items around the vertical line change positions and reduce in number.
33. E The main figure change direction and shaded ball becomes unshaded and vice versa.
34. E Note movement of the arrow in a clockwise direction in the larger rectangular and anticlockwise in the smaller rectangular. The dot is also moving clockwise along the angles of the triangular portion of the bigger rectangular. Answer figure E best fits the blank column 5 in continuation of the above pattern.

35. E Note the clockwise movement of the arrow across the triangle.
The arrows in the circle are changing clockwise as well.

Answer figure E follows the same pattern.

36. A The corners of the star are getting shaded successively in each figure. The rectangular figure inside the circle is changing alternative from a horizontal to a vertical position and the dot inside it is also moving above and below the horizontal line. Answer figure A correctly continues the pattern.

37. E The triangle inside double lined circle is reversing position alternatively and the dot is moving anticlockwise in the circle.
Answer figure E continues the pattern.

38. D Note the alternating change in movement of the arrow in problem figures. The dot in the circle is rotating clockwise leaving one sector blank each time. The dot in the small rectangle is moving from right to left alternatively. Based on these parameters, figure D correctly continues the series.

39. D One line is increasing in each figure from 1 to 5.

40. E One line is increasing in each figure from 1 to 5.

41. E The sequence is 2-3-2-3 lines, hence in Figure 5 there should be 2 lines.

42. E The sequence is 3-4-3-4 lines, hence in Figure 5 there should be 3 lines.

43. C

44. B

45. A

46. D

47. B

TEST PAPER - 7 (NON-VERBAL)**Mirror Reflection of a Pattern**

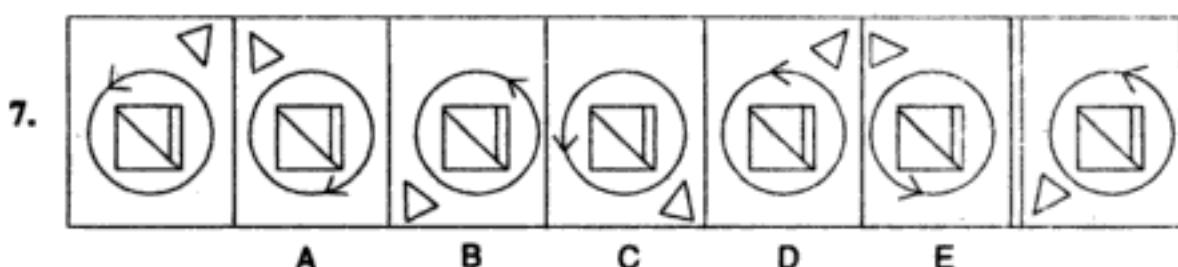
- 1.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D
-
- 2.
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
- A B C D
-
- 3.
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
- A B C D

Figure Rotation

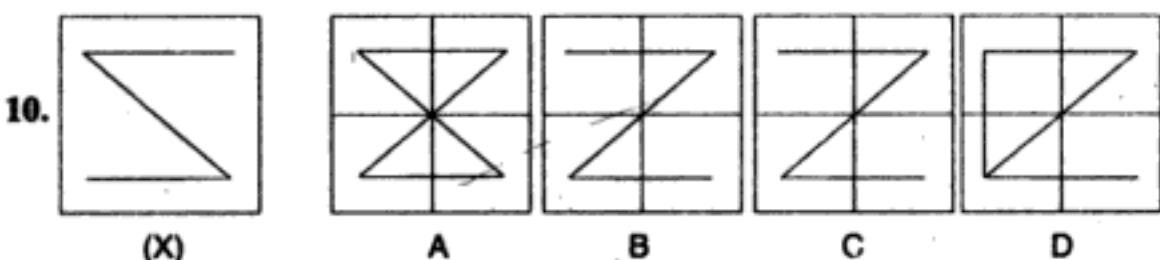
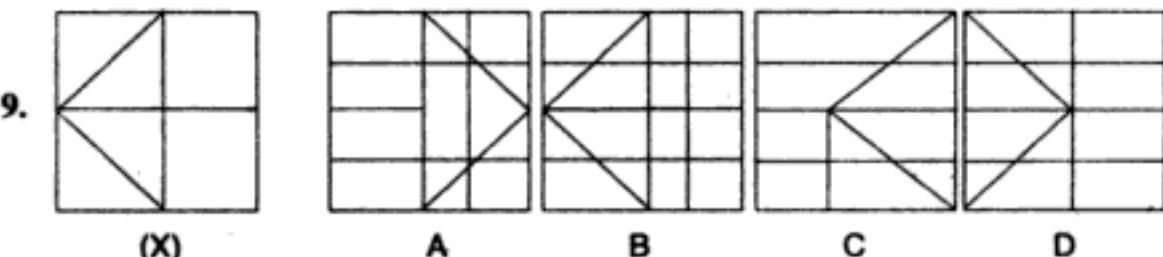
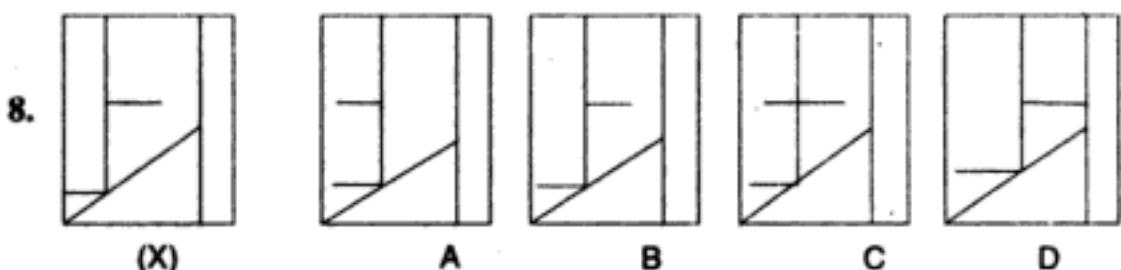
- 4.
- | | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|
- A B C D
-
- 5.
- | | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|
- A B C D

Detection of Figure Out of Series

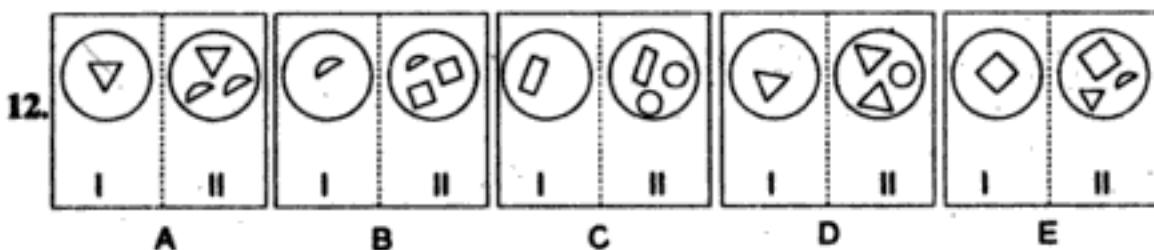
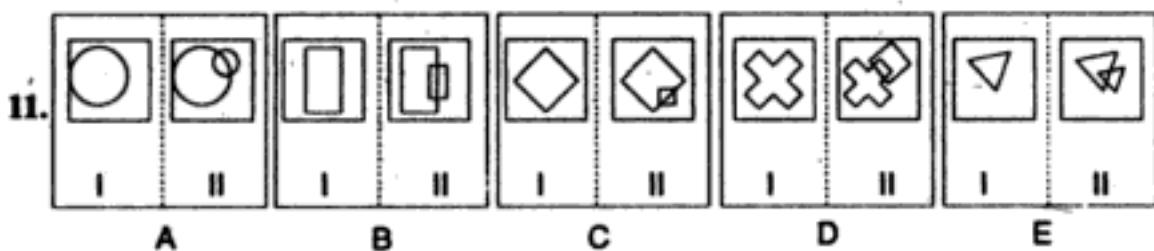
- 6.
- | | | | | | | |
|--|--|--|--|--|--|--|
| | | | | | | |
|--|--|--|--|--|--|--|
- A B C D E

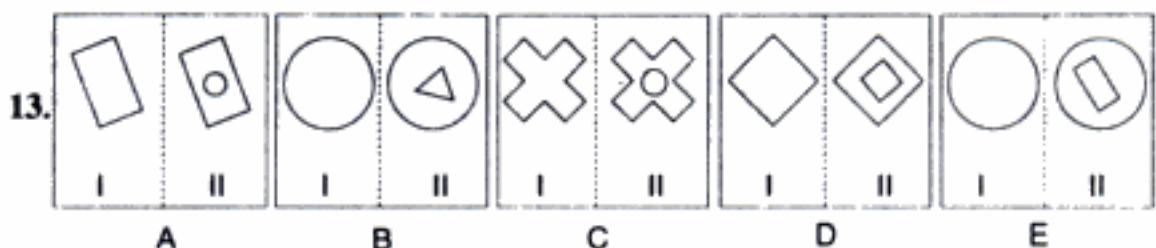
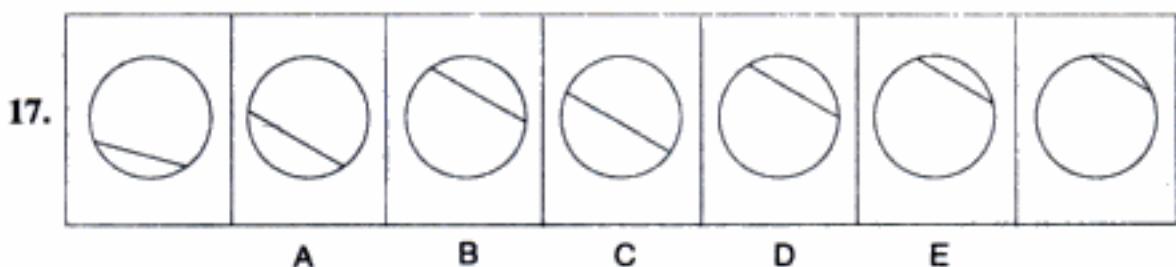
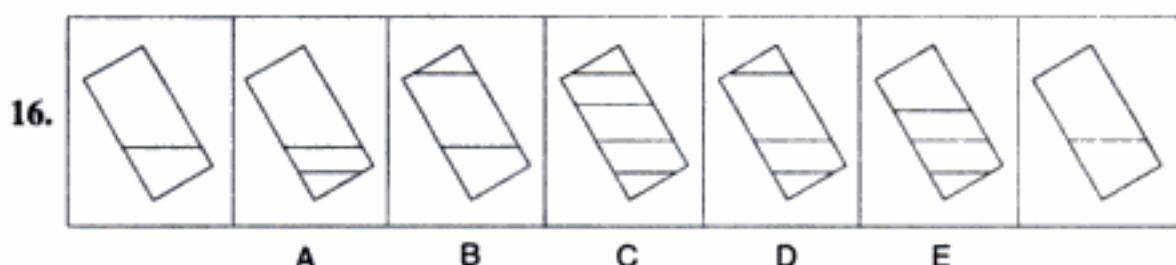
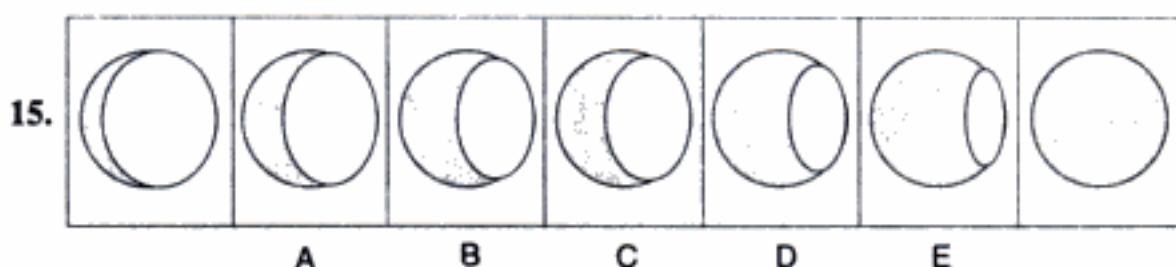
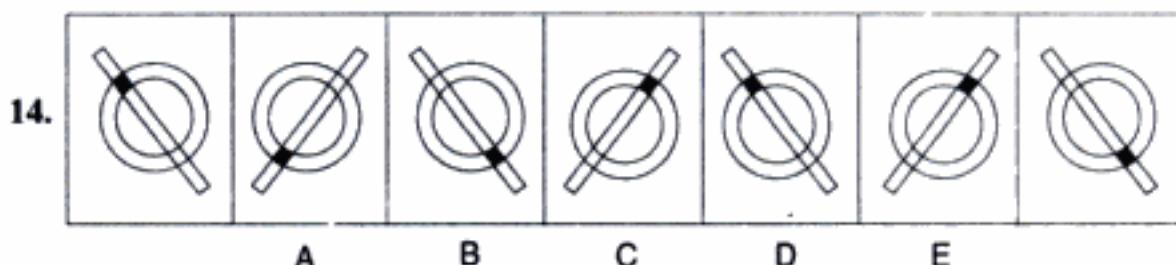
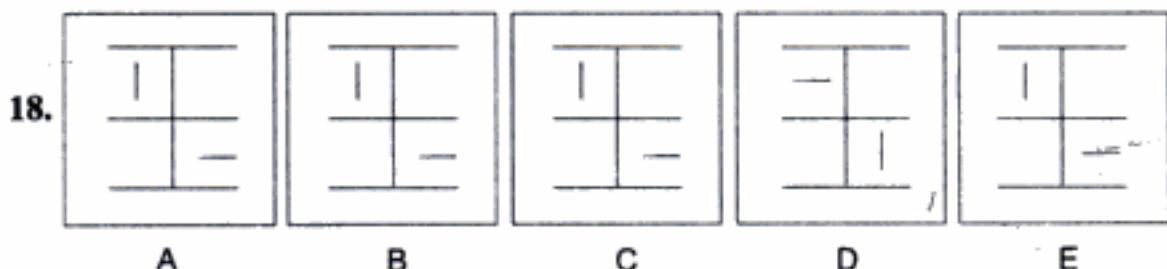


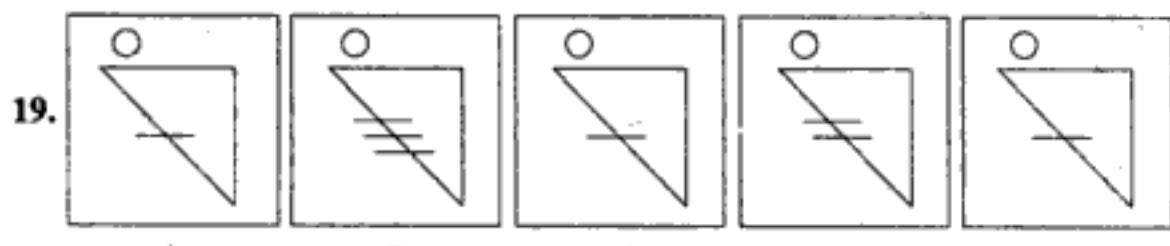
Detection of Figure Hidden in a Pattern



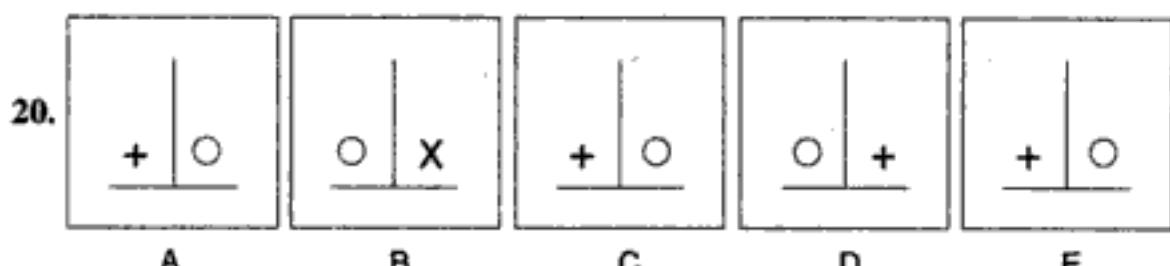
Pattern Comparison Between Two Sets of Figures



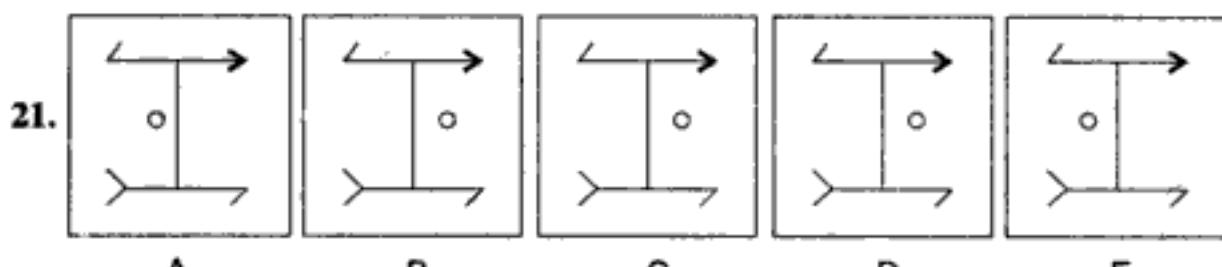
**Figures in a Proper Sequence****Classification**



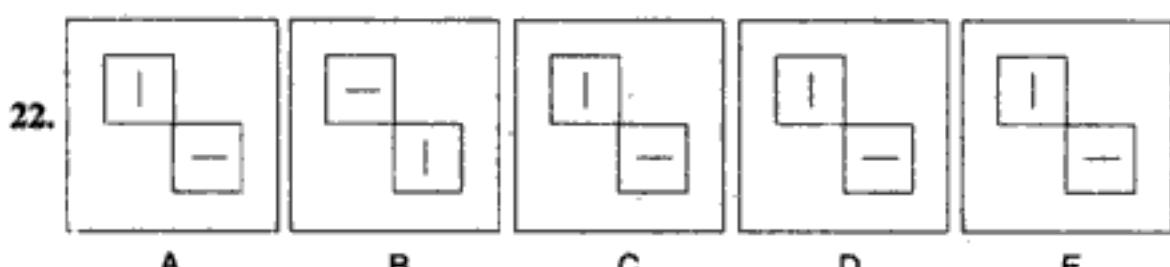
A B C D E



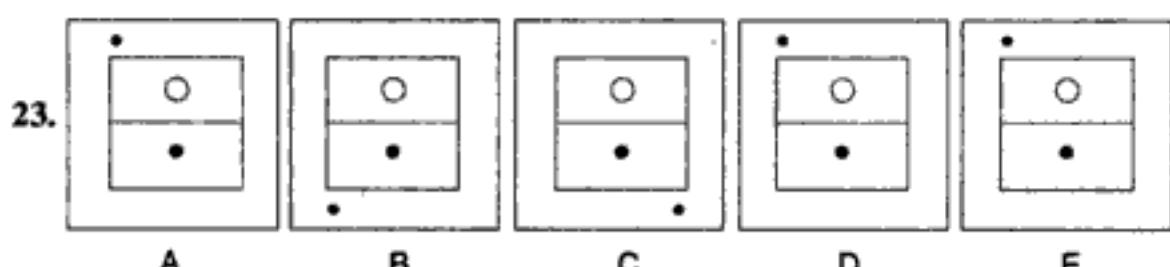
A B C D E



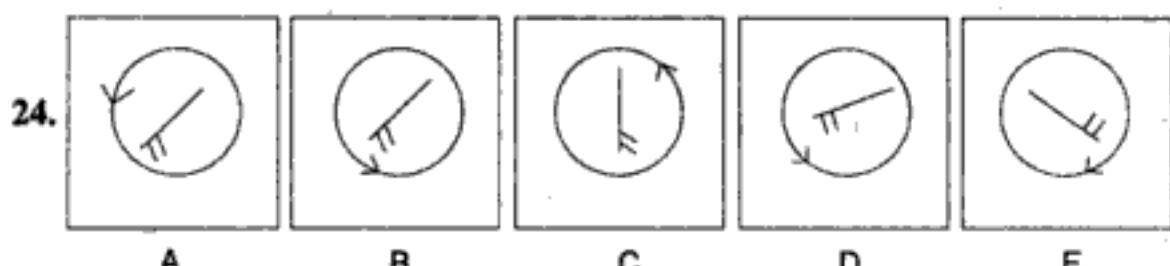
A B C D E



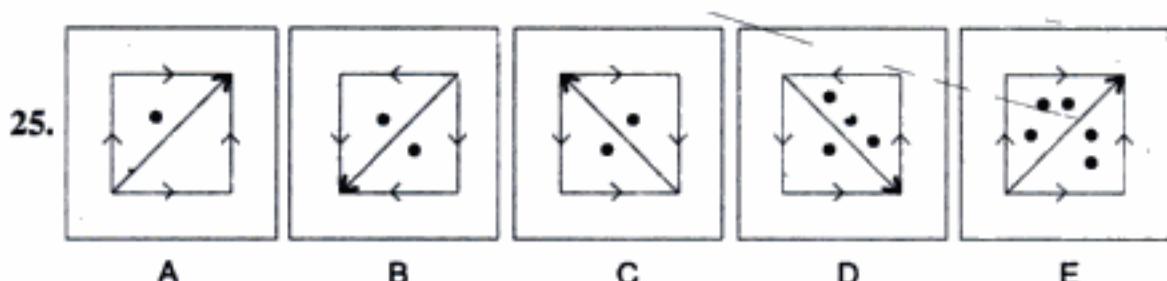
A B C D E



A B C D E

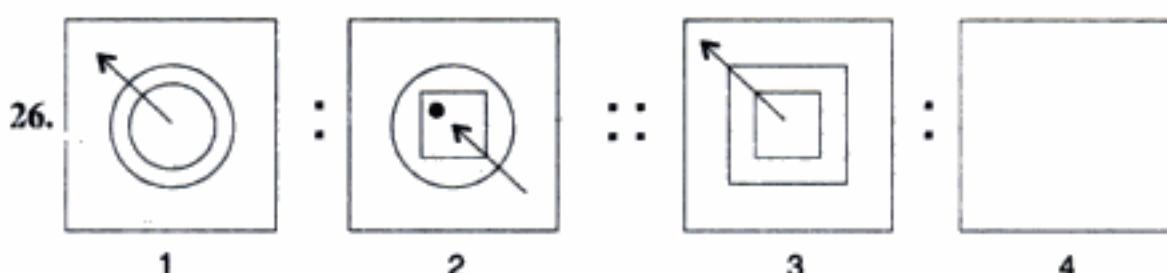


A B C D E

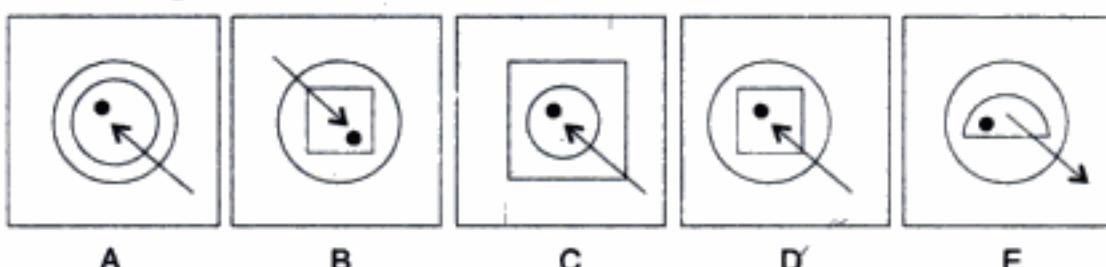


Analogical Non-Verbal Reasoning

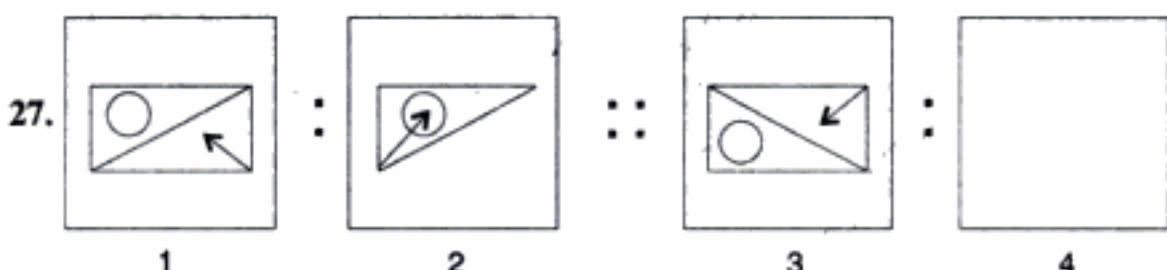
Problem Figures



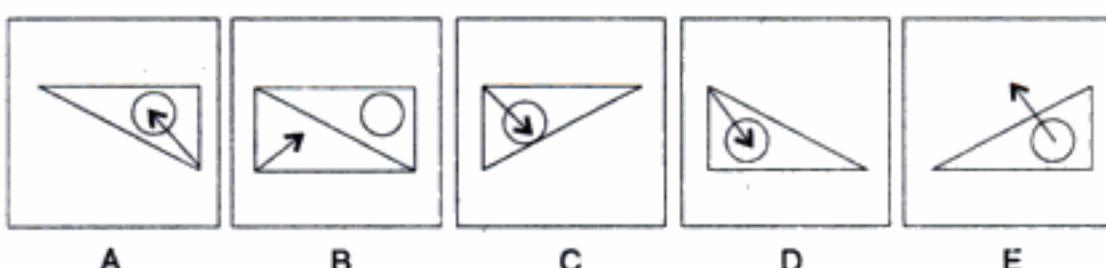
Answer Figures



Problem Figures



Answer Figures



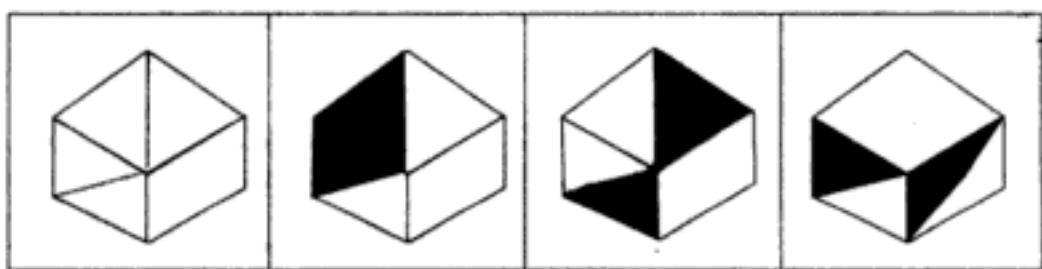
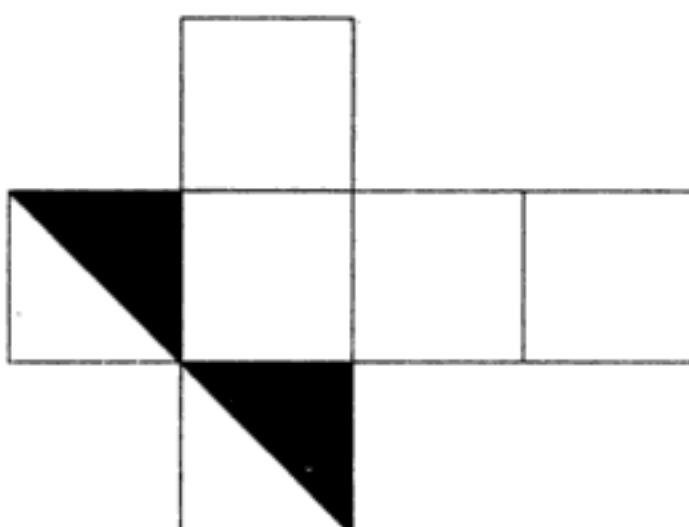
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Questions Dealing with Cubes and Dices

Directions: If the following figure is folded into a cube along the marked line, it should take the form of the following cubes?

34



1

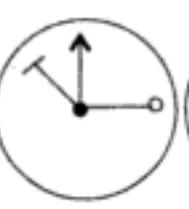
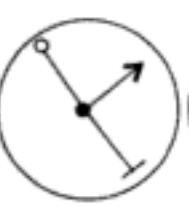
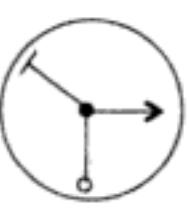
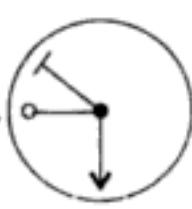
2

3

4

Clock Movements

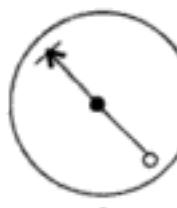
35



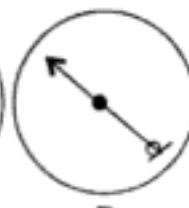
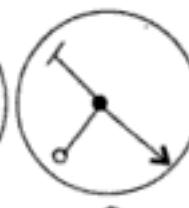
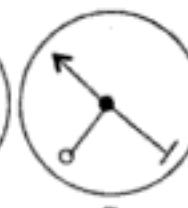
?

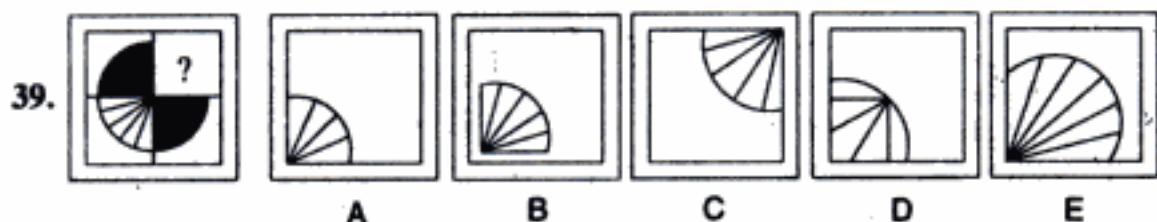
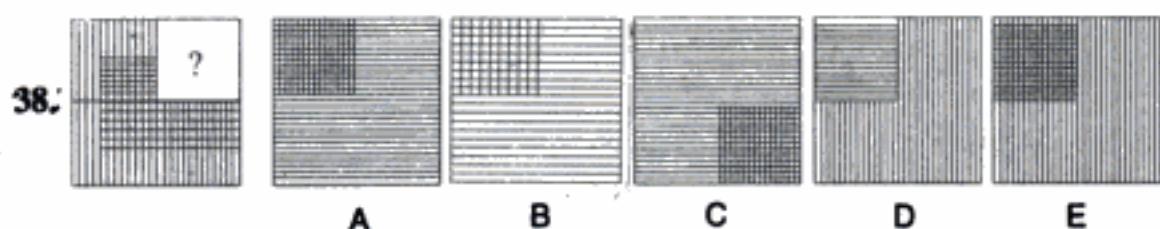
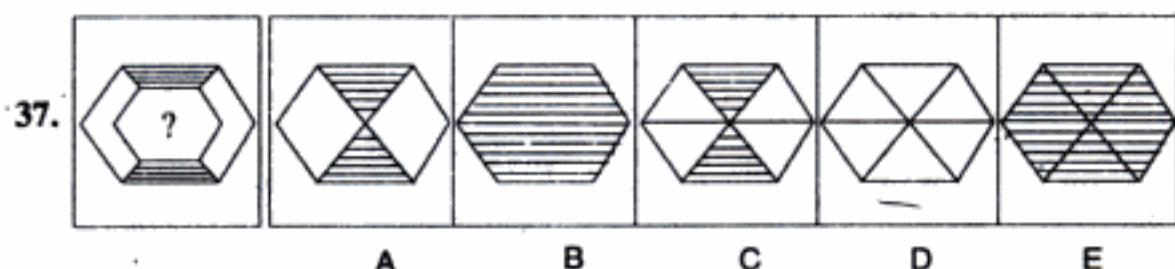
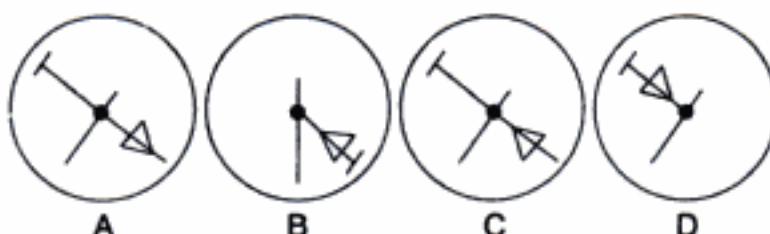
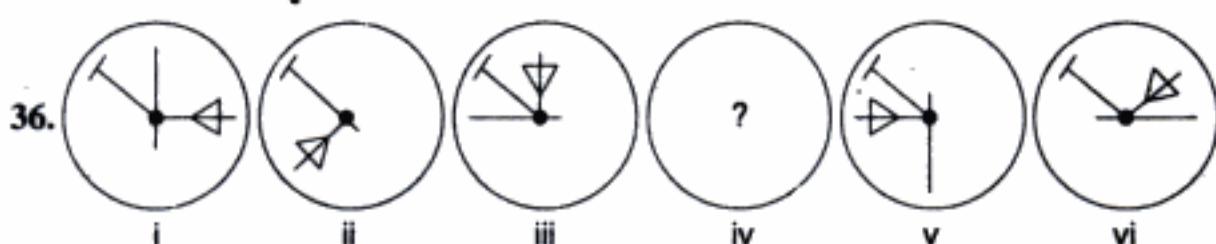
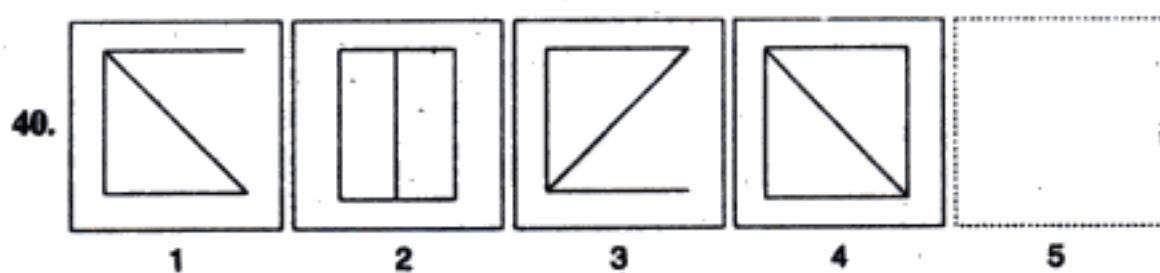


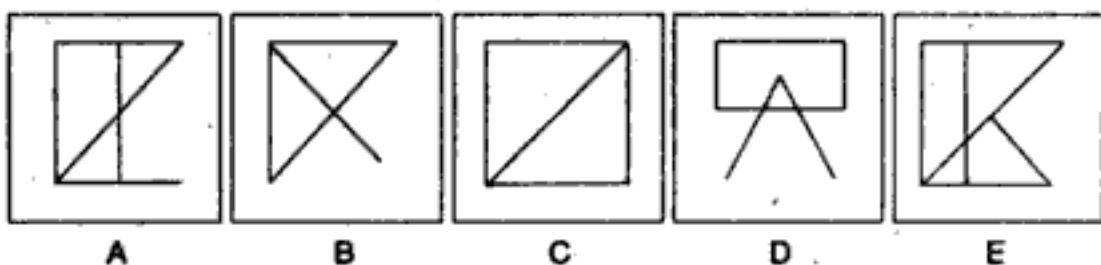
vi



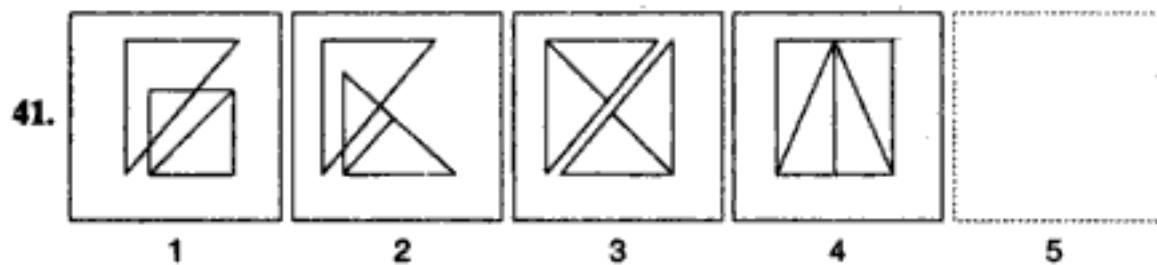
A



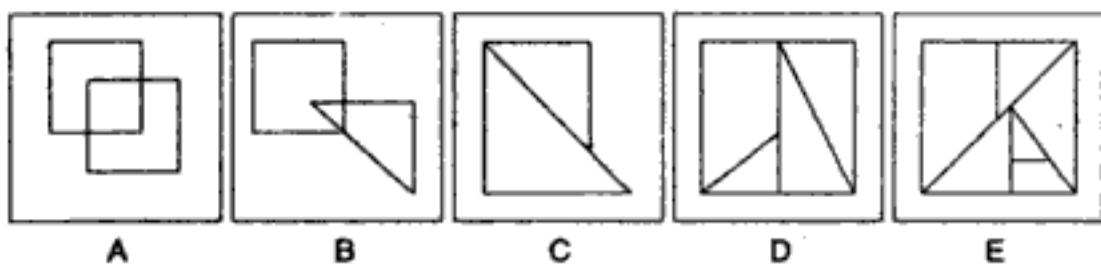
Pattern Completion**Completing the Series****Problem Figures**

Answer Figures

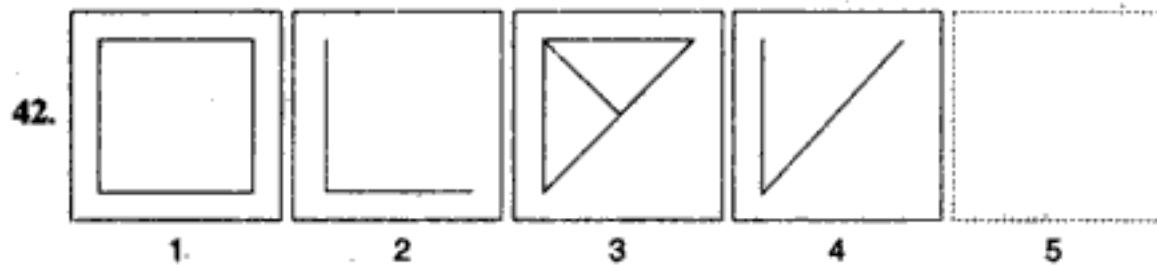
A B C D E

Problem Figures

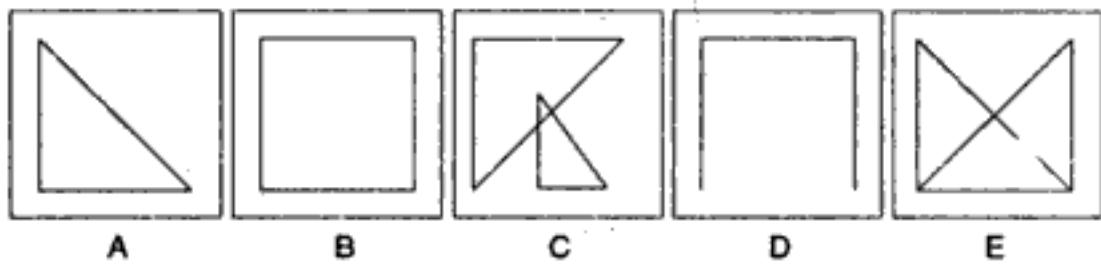
1 2 3 4 5

Answer Figures

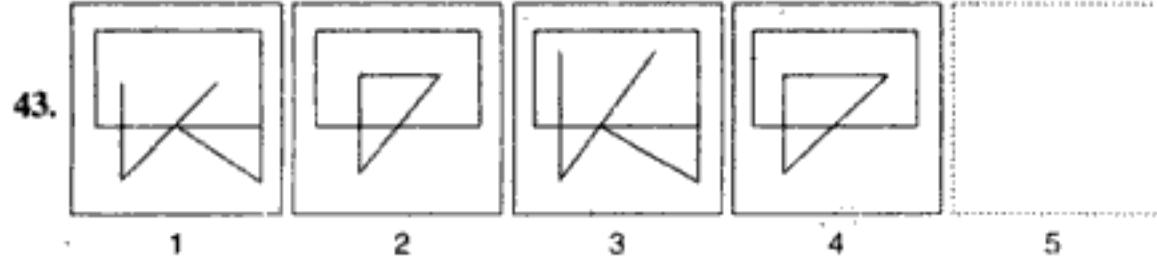
A B C D E

Problem Figures

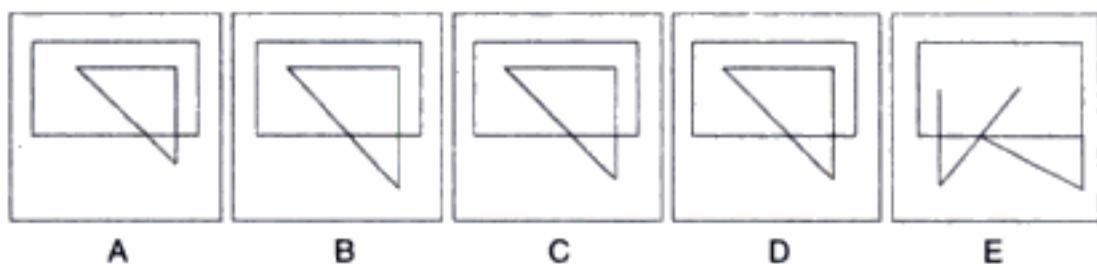
1 2 3 4 5

Answer Figures

A B C D E

Problem Figures

1 2 3 4 5

Answer Figures**Answers and Explanations**

1. B 2. A 3. B 4. B 5. B
 6. B 7. A 8. B 9. B 10. A

11. D The design inside the square in element I is intersected by a smaller version of itself in element II. Hence in D, the intersecting square is not correct.
12. E The design in element I is repeated in element II alongwith an addition of two items of a new design. In E, there should have been either two triangles or two semicircles.
13. D Element II repeats the design in element I with a new small design enclosed within it. Hence in D, in place of the small square, there should have been some other design.
14. A and C 15. B and C 16. B and E 17. B and C
18. D The position of both the dashes is wrong. The top one should be vertical and the lower one horizontal as in the others.
19. D The intersecting lines should be three in number.
20. B The plus sign and the small ball are exchanging positions alternately. In B in place of X, it should be +.
21. C The small ball is changing sides from left to right hand side. Hence in C, it should be on the left hand side.
22. D The dashes inside the boxes position alternately. In D, it should be like B.
23. D The dot outside is moving in an anticlockwise direction. Hence in D, it should be on the top right hand.
24. E In all others, the movement of the arrow is anticlockwise, whereas in the last figure E, it is clockwise.

25. C Number of black dots is increasing by one each time. In figure C, there should be three dots.
26. C In the first two figures, two circles with arrow in figure 1, changes to circle enclosing square in figure 2. Based on this analogy, C fits in the blank box.
27. D The rectangle reduces to the triangular with the circle and additional arrow but no change in position of either the triangle or the circle as in D.
28. E From problem Figure 1 to 2, the square and the circle exchange positions while the dot comes inside and the horizontal line gets extended to touch the outer figure. Based on this analogy, figure E is the obvious choice.
29. C Change in direction, movement of arrows and circle in the rectangular figures is obvious in figures 1 and 2. Based on this relationship, figure C relates very well to figure 3.
30. B From figure 1 to 2, there is an addition of a dot and arrow and the direction of the arrows is reversed. Figure B bears the same relation to figure 3.
31. D From figure 1 to 2, the circle moves down to intersect the corner of the rectangle diagonally opposite to the one it was previously intersecting while the arrow reverses direction and shifts from the rectangular to the square. Figure D best represents this change with reference to Figure 3.
32. B 33. D 34. A 35. B 36. C
37. A 38. B 39. C
40. B The sequence is 4-5-4-5 lines, hence in figure 5 there should be 4 lines.
41. A The sequence is 8-7-8-7 lines, hence in figure 5 there should be 8 lines.
42. B The sequence is 4-2-4-2 lines.
43. E Alternate figures are matching, i.e. 1, 3 and as such figure 5 should match with 1 and 3.

Section



Mock Test Papers

MOCK TEST 1

Test of Reasoning

- Q. 1.** Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

(1) PRT (2) QOM (3) CEG (4) UWY (5) IKM

- Q. 2.** In a row of boys Ganesh is twelfth from left and Rajan is fifteenth from right. When they interchange their positions Rajan becomes twentieth from right. How many boys are there in the row?

(1) 30 (2) 29 (3) 32 (4) 31 (5) None of these

- Q. 3.** If the alternate letters in the following alphabet starting from A are written in small and rest all in Capital, which of the following will represent the third month after July?

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(1) OCTObEr (2) ocToBeR (3) OCTOBER
(4) oCtObEr (5) None of these

- Q. 4.** If the positions of the first and the sixth letters in the word DISTRIBUTE are interchanged, similarly the positions of the second and the seventh, the third and the eighth and so on, which of the following letters will be the fifth from left after interchanging the positions?

(1) I (2) E (3) S (4) T (5) None of these

- Q. 5.** In a certain code language PERFECT is written as RGTHGEV. How is BROWN written in that code?

(1) CSPXO (2) DSQYP (3) CTQXP
(4) DTQYP (5) None of these

Q. 6. What should come in place of the question mark (?) in the following letter number series?

- | | | | |
|-------------------|----------|----------|----------|
| B2E | D5H | F12K | H27N? |
| (1) I58Q | (2) I57Q | (3) I58P | (4) J58Q |
| (5) None of these | | | |

Directions (Qs. 7-8):

- (A) 'S × T' means 'S' is brother of T.
- (B) 'S – T' means 'S' is mother of T.
- (C) 'S + T' means 'S' is father of T.

Q. 7. Which of the following represents M is son of Q?

- | | | |
|---------------|-------------------|---------------|
| (1) M × R ÷ Q | (2) M ÷ R × Q | (3) M – R + T |
| (4) Q + M × R | (5) None of these | |

Q. 8. To find answer to the above question, which of the following statements can be dispensed with?

- | | | |
|-----------------|------------|-----------------|
| (1) B only | (2) C only | (3) B or C only |
| (4) A or B only | (5) None | |

Q. 9. If it is possible to make a meaningful word with the third, fifth, eighth and tenth letters of the word DISTRIBUTE, which of the following will be the third letter of that word? If no such word can be made, give 'X' as the answer, and if more than one such word can be made, give 'M' as the answer.

- | | | | | |
|-------|-------|-------|-------|-------|
| (1) S | (2) R | (3) E | (4) X | (5) M |
|-------|-------|-------|-------|-------|

Q. 10. Mohit is taller than Ashok. Gopal is taller than Prabodh. Who among them is the tallest? To find out the answer, which of the information given in the statements A and B is/are sufficient?

- A. Ashok is taller than Gopal.
 - B. Gopal is shorter than Ashok.
- | | | |
|---------------------------------------|---|----------------------------|
| (1) Both A and B together are needed. | (2) Both A and B together are not sufficient. | (3) A alone is sufficient. |
| (4) B alone is sufficient. | (5) Either A or B alone is sufficient. | |

Q. 11. If X is coded as 7; P is coded as 9; Z is coded as 6; M is coded as 5; L is coded as 3 and D is coded as 2, then what will be the coded form of PLDXMZ?

- | | | |
|------------|-------------------|------------|
| (1) 932756 | (2) 923756 | (3) 952736 |
| (4) 937526 | (5) None of these | |

Q. 12. If P denotes '+'; R denotes '×'; S denotes '-' and T denotes '+'; then what will be the value of $5R9P7S9T3P6$?

- (1) 54 (2) 128 (3) 59 (4) 55 (5) None of these

Q. 13. Among Prabir, Subodh, Gopal and Suresh who wore a red shirt? To find out the answer, which of the information given in the statements A and B is/are sufficient?

- A. Each of them wore a shirt of different colour.
 - B. Prabir and Gopal wore yellow and blue shirts and Subodh wore green shirt.
- (1) Both A and B together are not sufficient.
 (2) Both A and B together are needed.
 (3) Either A or B alone is sufficient.
 (4) B alone is sufficient.
 (5) A alone is sufficient.

Directions (Qs. 14-15):

- (A) P, Q, R, S and T are sitting in a circle facing the centre.
 (B) R is immediate left of T.
 (C) P is between S and T.

Q. 14. Who is to the immediate left of R?

- (1) T (2) P (3) Q (4) S (5) Cannot be determined

Q. 15. To find the answer to the above question, which of the following statements can be dispensed with?

- (1) None (2) B only (3) B or C only
 (4) C only (5) None of these

Directions (Q. 16-20): In each question below are given two statements followed by four conclusions numbered I, II, III and IV. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the statements.

Q. 16. Statements:

Some papers are pencils.

All pencils are lions.

Conclusions:

- I. All lions are pencils.
- II. Some lions are pencils.
- III. Some lions are papers.
- IV. Some papers are lions.

Q. 17. *Statements:*

All cups are trees.

All trees are tigers.

Conclusions:

- I. All cups are tigers.
 - II. All tigers are cups.
 - III. All trees are cups.
 - IV. Some tigers are cups.

(1) Only II and III follow

(3) All follow

(5) None of these

- (2) Only I and IV follow
(4) None follows

Q. 18. Statements:

All trains are flowers.

Some flowers are watches.

Conclusions:

- I. Some trains are watches.
 - II. Some watches are trains.
 - III. Some watchēs are flowers.
 - IV. Some flowers are trains.

(1) All follow

(3) Only I and II follow

(5) None of these

- (2) Only III and IV follow
 (4) Only II and III follow

O. 19. *Statements:*

Some boxes are cars.

Some cars are roads.

Conclusions:

- I. Some roads are boxes.
 - II. Some cars are boxes.
 - III. No box is road.
 - IV. Some roads are cars.

(1) Only II and III follow

(3) Only either III or IV a

(5) None of these

- (2) Only I and IV follow
 (4) Only II and IV follow

Q. 20. Statements:

No goat is door.

All doors are chairs.

Conclusions:

- I. Some chairs are doors.
 - II. Some chairs are goats.
 - III. No chair is goat.
 - IV. Some doors are goats.
- (1) Only either II or III follows
 (2) Only either II or III and IV follows
 (3) Only I follows
 (4) None follows
 (5) None of these

Directions (Qs.21-25): In each question below is given a statement followed by courses of action numbered I, II and A course of action is a step or administrative decision to be taken for ** follow-up, or further action regard to the problem, policy, etc. On the basis of the information given in statement, you have to assume thing in the statement to be true, then one which of the three given suggested types of action logically follows for **. Then decide which of the answers (1), (2), (3), (4) and (5) is the correct.

Q. 21. Statement:

Drinking water supply to New Bombay has been suspended till further orders from Maharashtra Pollution Control Board following pollution of Patalganga river, caused by discharge of effluents from some chemical industries.

Courses of action:

- I. The industries responsible for discharging effluents into the river should be asked to close down immediately.
 - II. The river water should immediately be treated chemically before resuming supply.
 - III. The Pollution Control Board should check the nature of effluents being discharged into the river by industries at regular intervals.
- | | |
|--------------------|----------------------------|
| (1) All follow | (2) Only III follows |
| (3) Only I follows | (4) Only II and III follow |
| (5) None of these | |

Q. 22. Statement:

The vehicular traffic has increased so much in the recent past that it takes at least two hours to travel between the city and the airport during peak hours.

Courses of action:

O. 23. Statement:

A devastating earthquake has ravaged the city killing hundreds of people and rendering many more homeless.

Courses of action:

Q. 24. Statement:

Due to cancellation of a huge export order for not adhering to the time frame, the company is likely to get into incurring losses in the current financial year.

Courses of action:

O. 25. Statement:

The Department of Education has recommended that the primary level admission to Government and Government-aided schools should be done purely by random selection and not by admission tests. This is necessi-

tated as the number of admission seekers are much more than the available seats.

Courses of action:

Directions (Qs. 26-30): We come across many funny incidents related to different walks of life. One of the features of the funny incidents is the punch line or a climax—which gives the incident a sudden transformation or twist (into something not expected). It is this punch line which makes the incident funny.

In each of the following questions an incident is described but the punch line is missing—indicated by a blank. After the incident two statements numbered I and II are given. Considering the incident, you have to decide which of the two statements fits as a punch line.

Give answer "Only I" if you think only statement I fits; Give answer "Only II" if you think only statement II fits; Give answer "Both with contrasting idea" if you think both I and II fit but the idea or the wavelength of approach in both the statement is different and contrasting; Give answer "Both with same idea" if you think both I and II fit and the wavelength of approach in both the statements is also more or less the same; Give answer "Neither" if you think neither of the statements fits.

Q. 26. Seeing a boy in the class crying, the teacher asked, "Why are you crying?" The boy replied _____."

Q. 27. Seeing a man smoking in the railway compartment his co-passenger told him, "You should stop smoking, otherwise you will get cancer." The man smoking replied "_____".

- I. Well, I am in charge of the cancer detection centre of the city I live.
II. I was detected for suffering from cancer twenty years back.

Q. 28. A man was giving advice to his friend by saying, "Remember, you should never steal because _____."

Q. 29. On returning home from office one day, a man said to his wife, "I am not going to office from tomorrow because _____."

Q. 30. A person who consumes alcohol regularly told his friend, "I don't take bath on Thursday because _____."

Directions (Qs. 31-35): In each question below is given a statement followed by three assumptions numbered I, II and III. An assumption is something supposed or taken for granted. You have to consider the statement and the assumptions and decide which of the assumptions is implicit in the statement, then decide which of the answers (1), (2), (3), (4) and (5) is the correct answer.

O. 31. Statement:

Facing the threat of the park being destroyed by the rodents the authority banned people carrying any food article while entering the park.

Assumptions:

- I. People may not now bring any food article inside the park.
 - II. The rodents may stop invading the park in future.
 - III. The number of people visiting the park may decrease.

- (1) All are implicit. (2) Only I and II are implicit.
 (3) Only II is implicit (4) Only II and III are implicit
 (5) None of these

Q. 32. Statement:

Being unable to maintain the roads in the city, the civic authority has decided to invite private enterprises to adopt different prominent roads in exchange of their advertisement rights on these roads.

Assumptions:

- I. The common people may not welcome the decision.
 - II. Adequate number of private enterprises may respond to the invitation.
 - III. The traffic problem may decrease in near future.
- (1) Only II is implicit (2) None is implicit
 (3) Only II and III are implicit (4) Only I and II are implicit
 (5) None of these

Q. 33. Statement:

Saroj made an application to the bank for a loan of Rs. 1,80,000 by mortgaging his house to the bank and promised to repay it within five years.

Assumptions:

- I. The bank has a practice of granting loans for Rs. 1,00,000/- and above.
 - II. The bank accepts house as collateral security against such loans.
 - III. The bank may grant loan to Saroj.
- (1) All are implicit. (2) None is implicit.
 (3) Only I and II are implicit. (4) Only II and III are implicit.
 (5) None of these

Q. 34. Statement:

"Wanted first class Engineering graduates to join the team of highly motivated employees in our company"—an advertisement.

Assumptions:

- I. Adequate number of first class engineering graduates will respond to the advertisement.
 - II. Those who do not have first class will not apply.
 - III. Only those who are motivated will respond to the advertisement.
- (1) None is implicit. (2) Only I is implicit.
 (3) Only I and II are implicit. (4) Only I and III are implicit.
 (5) None of these

O. 35. Statement:

"If you want to get the best treatment for coronary diseases you must approach hospital Z"—A tells B.

Assumptions:

Directions (Qs. 36-40): Read the following information carefully and answer the questions given below it:

- (i) Five friends P, Q, R, S and T travelled to five different cities of Madras, Calcutta, Delhi, Bangalore and Hyderabad by five different modes of transport of Bus, Train, Aeroplane, Car and Boat from Bombay.
 - (ii) The person who travelled to Delhi did not travel by boat.
 - (iii) R went to Bangalore by car and Q went to Calcutta by aeroplane.
 - (iv) S travelled by boat whereas T travelled by train.
 - (v) Bombay is not connected by bus to Delhi and Madras.

Q. 36. Which of the following combinations of persons and mode is not correct?

- (1) T-Aeroplane (2) R-Car (3) S-Boat
 (4) P-Bus (5) Q-Aeroplane

Q. 37. Which of the following combinations is true for S?

- (1) Madras-Bus (2) Madras-Boat (3) Delhi-Bus
(4) Data inadequate (5) None of these

Q. 38. Which of the following combinations of place and mode is not correct?

- (1) Madras-Boat (2) Calcutta-Aeroplane (3) Hyderabad-Bus
(4) Bangalore-Car (5) Delhi-Bus

Q. 39. The person travelling to Delhi went by which of the following modes?

- (1) Bus (2) Train (3) Aeroplane (4) Car (5) Boat

Q. 40. Who among the following travelled to Delhi?

Directions (Qs. 41-45): Each question given below is followed by five statements I, II, III, IV and V. Some of these statements give information regarding the answer of the given question. You have to choose the choice which gives more information.

relevant/useful information in answering the question correctly. If all the statements together also do not answer the question, choose "None".

Q. 41. How old was Ramesh as on 25.7.1994?

- I. Ramesh's son Akhil was fifteen years old as on 25.7.1994.
II. Ramesh was married on 20.5.1970.
III. Ramesh's brother Pratap is exactly five years younger to him.
IV. Ramesh's wife Meena was born on 17.2.45.
V. Pratap was born on 5.3.1945.

(1) Only III and V (2) Only I, II and IV (3) Only II, III and V
(4) Only IV and V (5) None

Q. 42. Why the merger of the companies A and B did not take place?

Q. 43. How many brothers does D have?

Q. 44. Gopal, Varun and Tarun visited Bombay. Who among them was the first to visit?

- I. Varun reached on 15th January, 1995.
 - II. Gopal left Bombay on 20th January, 1995.
 - III. Tarun met Gopal at Bombay on 18th January, 1995.
 - IV. Varun met Tarun on 23rd January, 1995.
 - V. All the three were not present in Bombay on any day.

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Directions (Qs. 9 to 15): Find the missing terms of the series:

Q. 9. B, D, G, K, P, ?

- (A) S (B) V (C) T (D) W

Q. 10. ADG, HKN, ?

- (A) ORU (B) VXZ (C) JLN (D) BEG

Q. 11. 57, 74, 93, 114, ?

- (A) 137 (B) 127 (C) 147 (D) 144

Q. 12. 2, 10, 26, 50, 82, ?

- (A) 118 (B) 120 (C) 122 (D) 124

Q. 13. -1001000 - 0100 1 - 0010 - 0010001

- (A) 1000 (B) 1010 (C) 0101 (D) 0001

Q. 14. A-BACCABA-AAB

-CCA-AA-A-AC

- (A) ABABAB (B) AABBAB (C) AAABAB (D) ABBABA

Q. 15. OKR, WSZ, KGN, ?

- (A) LIP (B) MIP (C) TMQ (D) HLE

Q. 16. If MOHAN is coded as 56237, and UMA is coded as 853, how can HANUMAN be coded?

- (A) 2758373 (B) 2378537 (C) 2852337 (D) 7783532

Q. 17. In a code language, EXPLANATION is written as EYQMAOAUUIOO.

Using the same code, OBVIOUSLY will be written as

- (A) OCWIOVTMZ (B) PCWJPVTMZ

- (C) OCWIOVTMZ (D) OCWIOUTMZ

Directions (Qs. 18 to 21): Which of the following items would be the correct response in a given trend?

Q. 18.

51	63	29
26	14	48
5	8	?
410	680	588

- (A) 9 (B) 6 (C) 5 (D) 7

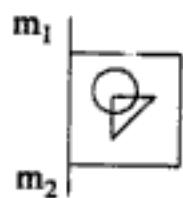
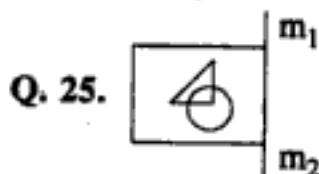
Q. 19.

3	5	7
4	9	8
2	3	?
5	11	10

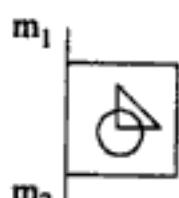
- (A) 4 (B) 6 (C) 3 (D) 5

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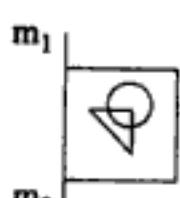
Directions (Qs. 25 and 26): Which one of the alternative is the correct mirror image of the given figure?



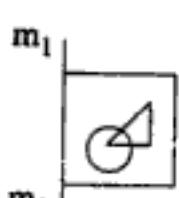
(A)



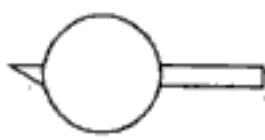
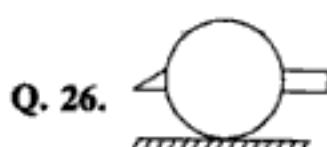
(B)



(C)



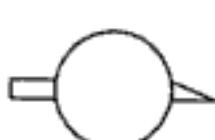
(D)



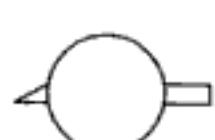
(A)



(B)

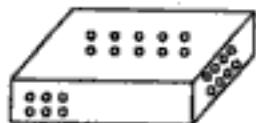
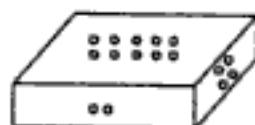


(C)



(D)

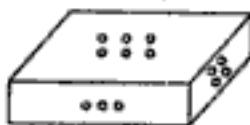
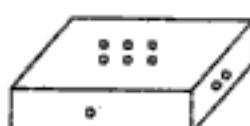
Q. 27. Two positions of a block are given below:



When ten is at the bottom, what number will be at the top?

- (A) 8 (B) 12 (C) 6 (D) 4

Q. 28. Two positions of a block are shown below:



When six is at the bottom, what number will be at the top?

- (A) 1 (B) 4 (C) 5 (D) 2

Q. 29. I went 10 m to the east, then turned north and walked another 15 m, then I turned west and covered 12 m and then turned south and covered 15 m. How far am I from my house?

- (A) 0 m (B) 2 m (C) 3 m (D) 5 m

Directions (Qs. 30–32): In the following question a statement is followed by two assumptions, I & II. Consider each statement and decide which of the assumptions is/are implicit in the statement. Indicate your answer as

- (A) If only I is implicit
- (B) If only II is implicit
- (C) If both I and II are implicit
- (D) If neither I nor II is implicit

Q. 30. Statement:

A few people demanded one man-one post in the case of the Minister for strengthening the party and for efficient administration.

Assumptions:

- I. No human being can be efficient in two spheres.
- II A person attending to only administration or party work will be able to do much.

Q. 31. Statement:

Population limitation follows economic prosperity automatically.

Assumptions:

- I. Poor people are against population control.
- II. Economic prosperity spare no time to individuals for family activities.

Q. 32. Statement:

War begins in the minds of men, and it is in the minds of men that defences against war have to be built.

Assumptions:

- I. Individuals are responsible for waging war.
- II. Wars arise because people's thinking is not on right lines.

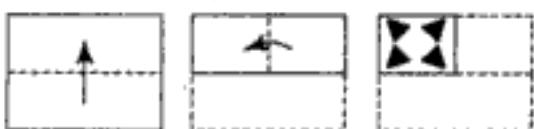
Q. 33. Statement:

Dr. 'Y' selects 10 meaningful words and 10 meaningless words. All are mixed up. All words are written in square cards of equal size.

Conclusions:

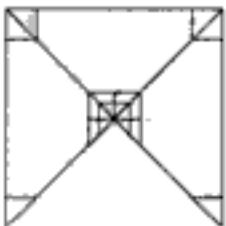
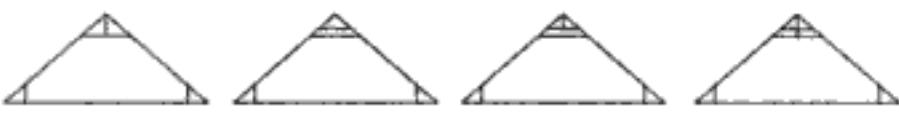
- I. Meaningful words occupy more space than meaningless words.
 - II. Both are picked up randomly.
- | | |
|---------------------------|------------------------------|
| (A) Only I follows | (B) Only II follows |
| (C) Both I and II follows | (D) Neither I nor II follows |

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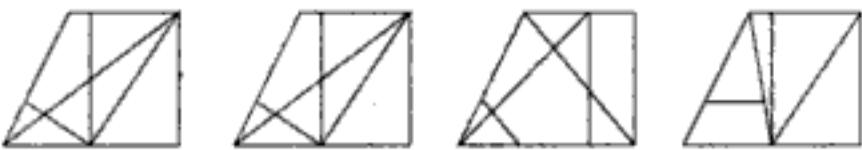
Q. 37. Problem Figures**Answer Figures**

- (A) (B) (C) (D)

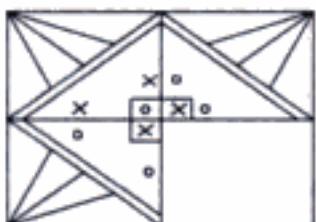
Directions (Qs. 38–41): In each of the following questions, a part of the given problem figure is missing. From the given alternatives, select the one which properly completes the pattern in the problem figure.

Q. 38. Problem Figure**Answer Figures**

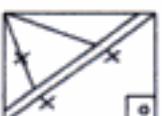
- (A) (B) (C) (D)

Q. 39. Problem Figures**Answer Figures**

- (A) (B) (C) (D)

Q. 40. Problem Figure**Answer Figures**

(A)



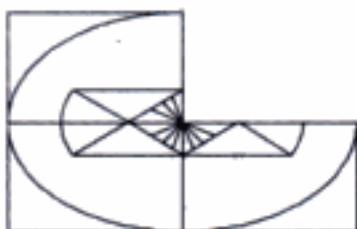
(B)



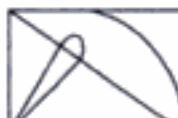
(C)



(D)

Q. 41. Problem Figure**Answer Figures**

(A)



(B)

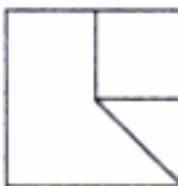
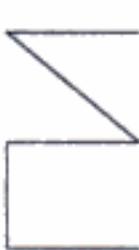


(C)

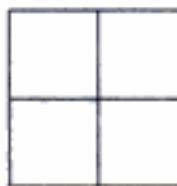


(D)

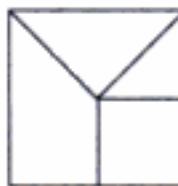
Directions (Qs. 42 and 43): In these questions a figure is given. From the given alternatives select the one in which the given figure is embedded.

Q. 42.

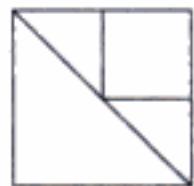
(A)



(B)



(C)



(D)

०. ४३.



- The figure consists of four separate geometric diagrams labeled (A), (B), (C), and (D). Each diagram shows a hexagon divided into smaller triangles by internal lines. (A) shows a hexagon divided into six equilateral triangles. (B) shows a hexagon divided into four triangles by a central vertical line and two diagonal lines from the center to the midpoints of opposite sides. (C) shows a hexagon divided into six triangles by connecting the center to each vertex. (D) shows a hexagon divided into four triangles by connecting the midpoints of opposite sides.

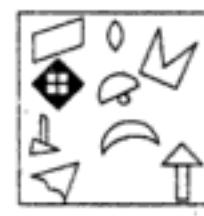
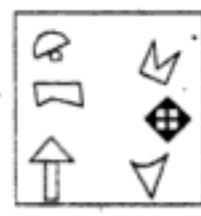
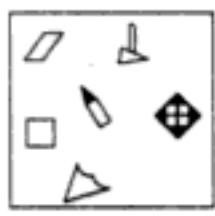
Q. 44. Arrange the following words in the sequence in which they occur in the dictionary.

Q. 45. Arrange the following items from general to particular.

- | | | | | |
|-------------------|---------|-------------------|-----------|--------------|
| 1. Sentence | 2. Word | 3. Chapter | 4. Phrase | 5. Paragraph |
| (A) 4, 3, 1, 2, 5 | | (B) 2, 3, 5, 4, 1 | | |
| (C) 3, 5, 1, 4, 2 | | (D) 1, 3, 2, 4, 5 | | |

Q. 46. In which figure the specified components of the key figure are found?

Key Figure



Q. 47. Number of letters skipped in between adjacent letters in the series is two.
Which of the following series observes this rule?

- (A) SVZCGJN (B) QSVYZCF (C) ZCGKMPR (D) MPSVYBE

Q. 48. Number of letters skipped in between adjacent letters in the series decrease by one. Which of the following series is observing the rule?

- (A) BGKNPR (B) LQUXAP (C) CINRTU (D) EJNQST

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Answers

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (A) | 2. (A) | 3. (B) | 4. (B) | 5. (C) | 6. (D) | 7. (C) |
| 8. (D) | 9. (B) | 10. (A) | 11. (A) | 12. (C) | 13. (C) | 14. (C) |
| 15. (B) | 16. (B) | 17. (D) | 18. (D) | 19. (D) | 20. (D) | 21. (C) |
| 22. (C) | 23. (D) | 24. (D) | 25. (B) | 26. (C) | 27. (B) | 28. (C) |
| 29. (B) | 30. (B) | 31. (D) | 32. (C) | 33. (D) | 34. (D) | 35. (B) |
| 36. (C) | 37. (D) | 38. (D) | 39. (A) | 40. (C) | 41. (D) | 42. (C) |
| 43. (C) | 44. (B) | 45. (C) | 46. (D) | 47. (D) | 48. (D) | 49. (A) |
| 50. (B) | | | | | | |

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Q. 13. If 'yellow' is called 'blue'; 'blue' is called 'white'; 'white' is called 'green'; 'green' is called 'brown' and 'brown' is called 'red', what is the colour of milk?

- (1) white (2) blue (3) green (4) red (5) brown

Q. 14. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

- (1) 25 (2) 27 (3) 63 (4) 49 (5) 29

Q. 15. Among five friends P, Q, R, S and T, who is the youngest? To arrive at the answer which of the following information given in the statements (A) and (B) is sufficient?

- (A) R is younger than P and T.
 (B) S is younger than Q.
 (1) Only A alone is sufficient
 (2) Either A or B is sufficient
 (3) Both A and B together are needed
 (4) Only B alone is sufficient
 (5) Both A and B together are not sufficient

Directions (Qs. 16-20): In each question below are given two statements followed by four conclusions numbered I, II, III and IV. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

Q. 16. Statements:

All cats are tigers.

Some tigers are lions.

Conclusions:

- I. All cats are lions.
 II. All lions are cats.
 III. Some lions are cats.
 IV. Some cats are lions.

- (1) None follows (2) All follow
 (3) Only I and II follow (4) Only III and IV follow
 (5) None of these

Q. 17. Statements:

No fruit is tree. All trees are stones.

Conclusions:

- I. No stone is fruit.

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Directions (Qs. 21-25): Below is given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.

Mark Answer	If you think
"Definitely True"	the inference properly follows from the statement of facts given.
"Probably True"	the inference may be true in the light of the facts given but not definitely true.
"Data Inadequate"	from the facts given it cannot be said whether the inference is likely to be true or false.
"Probably False"	the inference is probably false in the light of the facts given though not definitely false.
"Definitely True"	the inference cannot possibly be drawn from the facts given or it contradicts the given facts.

Indian granite industry is in peril in the absence of a uniform policy from the state governments, despite the thrust given by liberalisation policies of the union government in the last two years. Compared to the remarkable progress in the field during the last three years, the absence of matching policies by state governments had put granite quarry owners and others involved in the industry on the verge of collapse in the international market. The policies differed from state to state, had created problems as far as loyalty, dead rent and duration of lease were concerned.

Q. 21. The granite production is largely controlled by individuals.

- (1) Data inadequate (2) Definitely false (3) Probably true
(4) Definitely true (5) Probably false

Q. 22. The granite produced in India does not match with the quality of international level.

- (1) Definitely false (2) Definitely true (3) Probably true
(4) Data inadequate (5) Probably false

Q. 23. The union government's liberalisation policy became applicable to granite industry only during the last two years.

- (1) Probably false (2) Definitely true (3) Probably true
(4) Data inadequate (5) Definitely false

Q. 24. Each state having granite quarry has set up its own rules which are contrary to the interest of the industry.

- (1) Definitely true (2) Data inadequate (3) Definitely false
(4) Probably true (5) Probably false

Q. 25. Till three years ago, granite production in India was not profitable.

- (1) Definitely true (2) Probably true (3) Data inadequate
(4) Probably false (5) Definitely false

Directions (Qs. 26-30): In each question below is given a statement followed by three courses of action numbered I, II and III. A course of action is a step or administrative decision to be taken for improvement, follow-up or further action in regard to the problem, policy, etc. on the basis of the information given in the statement. You have to assume everything in the statement to be true, then decide which of the three suggested courses of action logically follows for pursuing. Then decide which of the answers (1), (2), (3), (4) and (5) is correct and indicate it on the answersheet.

Q. 26. Statement:

A mass mortality of shrimps in ponds on entire Andhra Coast has recently been reported due to the presence of a virus.

Courses of action:

O. 27. Statement:

In one of the worst accidents in railway level crossing fifty people died when a bus carrying them collided on to a running train.

Courses of action:

Q. 28. Statement:

The world will have to feed more than 10 billion people in the next century of whom half will be in Asia and will eat rice as their staple.

Courses of action:

- I. More funds should immediately be allocated for rice research to help ensure adequate supplies.
 - II. The people in Asia should be encouraged to change their food habit.
 - III. The rice should be grown in countries outside Asia to meet the demand.
- | | |
|---------------------------|----------------------------|
| (1) Only I and II follow | (2) Only II and III follow |
| (3) Only I and III follow | (4) All follow |
| (5) None of these | |

Q. 29. Statement:

There was a spurt in criminal activities in the city during the recent festival season.

Courses of action:

- I. The police should immediately investigate into the causes of this increase.
 - II. In future the police should take adequate precaution to avoid recurrence of such situation during festival season.
 - III. The known criminals should be arrested before any such season.
- | | |
|----------------------------|--------------------------|
| (1) None follows | (2) All follow |
| (3) Only II and III follow | (4) Only I and II follow |
| (5) None of these | |

Q. 30. Statement:

The weather bureau has through a recent bulletin forecast heavy rainfall during the next week which may cause waterlogging in several parts of the city.

Courses of action:

- I. The bulletin should be given wide publicity through the mass media.
 - II. The civic authority should keep in readiness the pumping system for removal of water from these parts.
 - III. The people should be advised to stay indoors during the period.
- | | |
|---------------------|----------------------------|
| (1) None follows | (2) Only II and III follow |
| (3) Only II follows | (4) Only I and II follow |
| (5) None of these | |

Directions (Qs. 31-35): In each question below is given a statement followed by three assumptions numbered I, II and III. An assumption is something supposed or taken for granted. You have to consider the statement and the assumptions and decide which of the assumptions is implicit in the statement. Then decide which of the answers (1), (2), (3), (4) and (5) is the correct answer and indicate it on the answersheet.

O. 31. Statement:

The state electricity board has sent a notice to all the consumers that if the bill amount is paid by 10th of the due month a rebate of 2% will be offered; however, if the bill for two consecutive months is not paid a penalty of 3% will be levied on the consumer.

Assumptions:

O. 32. Statement:

"Fly with us and experience the pleasure of flying"—an advertisement by an airline.

Assumptions:

Q. 33. Statement:

The professor announced in the class that the next periodical examination will be held on 15th of the next month.

Assumptions:

- I. All the students may appear in the examination.
II. The college will remain open on 15th of the next month.
III. The students can study till 15th of the next month to pass the examination.

(1) Only II and III are implicit (2) Only II is implicit
(3) Only I and II are implicit (4) Only III is implicit
(5) None of these

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Answers

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (4) | 2. (1) | 3. (4) | 4. (2) | 5. (5) | 6. (5) | 7. (4) |
| 8. (1) | 9. (2) | 10. (1) | 11. (5) | 12. (3) | 13. (3) | 14. (5) |
| 15. (5) | 16. (5) | 17. (5) | 18. (2) | 19. (1) | 20. (3) | 21. (4) |
| 22. (4) | 23. (2) | 24. (1) | 25. (3) | 26. (4) | 27. (2) | 28. (1) |
| 29. (2) | 30. (5) | 31. (1) | 32. (5) | 33. (4) | 34. (5) | 35. (2) |
| 36. (2) | 37. (1) | 38. (5) | 39. (3) | 40. (4) | 41. (1) | 42. (5) |
| 43. (5) | 44. (5) | 45. (5) | 46. (5) | 47. (4) | 48. (1) | 49. (5) |
| 50. (3) | | | | | | |

MOCK TEST 4

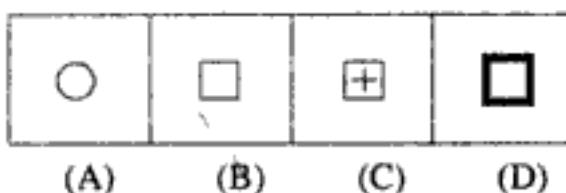
Reasoning Ability

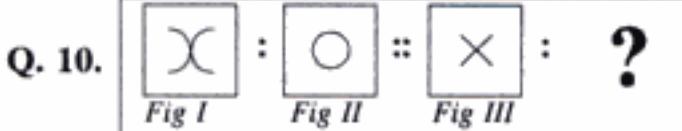
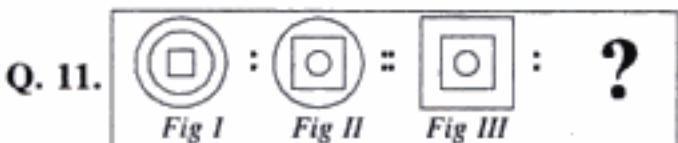
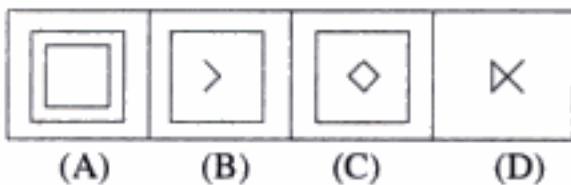
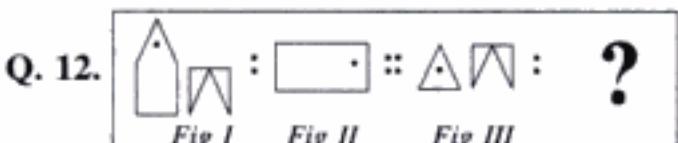
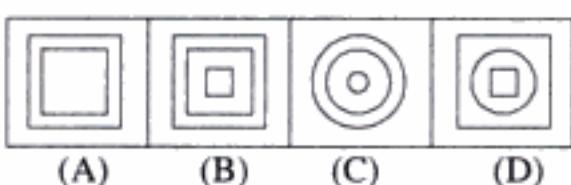
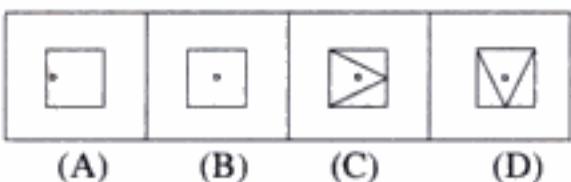
- Q. 1.** 'North Pole' is related to 'Magnet' in the same way as _____ is related to 'Battery'
 (A) Cell (B) Power (C) Terminal (D) Energy
- Q. 2.** 'AG' is related to 'IO' in the same way as 'EK' is related to
 (A) MS (B) LR (C) PV (D) SY
- Q. 3.** Arrange the following words in a meaningful order:
 1. Gold 2. Iron 3. Sand 4. Platinum 5. Diamond
 (A) 3 2 1 5 4 (B) 2 4 3 5 1 (C) 5 4 3 2 1 (D) 4 5 1 3 2
- Q. 4.** 'Ice' is related to 'Coolness' in the same way as 'Earth' is related to
 (A) Weight (B) Gravitation (C) Forest (D) Ocean
- Q. 5.** 'BDFH' is related to 'JLNP' in the same way as 'RTVX' _____ is related to
 (A) BDHF (B) BDFZ (C) ZBDF (D) YZAB
- Q. 6.** 'ACFJ' is related to 'ZXUQ' in the same way as 'EGJN' is related to
 (A) VUSQ (B) VTRP (C) DBYU (D) VTQM
- Q. 7.** 'DCBA' is related to 'ZYXW' in the same way as 'HGFE' is related to
 (A) RSTU (B) VUTS (C) STVU (D) UVST
- Q. 8.** 'Artist' is related to 'Painting' in the same way as 'Symphony' is related to
 (A) Poet (B) Novelist (C) Composer (D) Essayist

Directions (Qs. 9–12): Which of the Answer Figures is related to Figure III in the same way as Figure II is related to Figure I ?

- Q. 9.**

Answer Figures



**Answer Figures****Answer Figures****Answer Figures****Q. 13.** Which number will complete the following series?

6, 11, 21, 36, 56, ?

- (A) 51 (B) 91 (C) 42 (D) 81

Q. 14. Which number is wrong in the following series?

1236, 2346, 3456, 4566, 5686

- (A) 5686 (B) 1236 (C) 3456 (D) 4566

Q. 15. Find the missing number in the following series.

6, 12, 21, ?, 48

- (A) 38 (B) 40 (C) 45 (D) 33

Q. 16. Which number will come at the sign of interrogation?

8 : 81 :: 64 : ?

- (A) 525 (B) 125 (C) 137 (D) 625

Q. 17. Which number will come at the sign of interrogation?

25 : 37 :: 49 : ?

- (A) 41 (B) 65 (C) 56 (D) 60

Q. 18. Which number pair will come at the signs of interrogation?

951 : 40 :: ? : ?

- (A) 840 : 73 (B) 730 : 62 (C) 621 : 51 (D) 511 : 40

Directions (Qs. 19–21): Find the missing letters of the series.

Q. 19. _ o p _ m o _ n _ _ p n m o p _

- (A) m n o m p n (B) m n p o m n
(C) m p n m o p (D) m n p m o n

Q. 20. d _ b d d _ _ d _ e b d _ e _ d

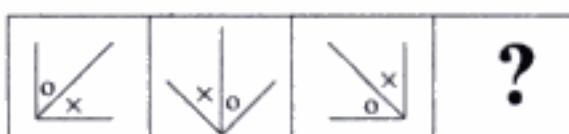
- (A) e e b d d b (B) e b d e d b
(C) e d e b d b (D) e e b d b d

Q. 21. g f e _ i g _ e i i _ f e i _ g f _ i t

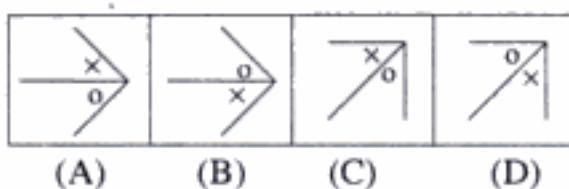
- (A) i f g i e (B) f i g i e (C) e i f g i (D) i f i g e

Directions (Qs. 22–24): Find the missing figure in the series:

Q. 22. Series



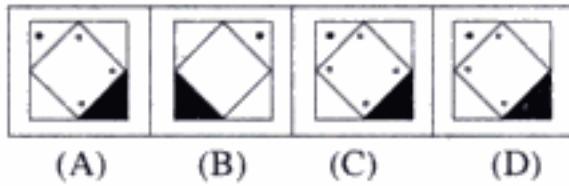
Answer Figures

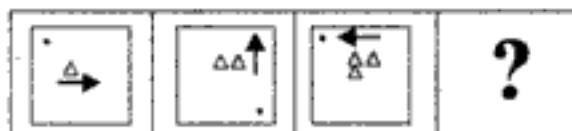
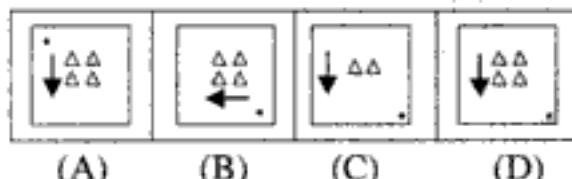


Q. 23. Series



Answer Figures



Q. 24. Series**Answer Figures**

(A) (B) (C) (D)

Q. 25. Find that set of numbers from the four alternative sets of numbers, given below, that is similar to the given set.

Given set: 6, 13, 22

- (A) 11, 18, 27 (B) 10, 16, 28 (C) 13, 19, 32 (D) 6, 13, 27

Q. 26. Which one is different from the rest three?

- (A) BFIK (B) DHKM (C) MQTV (D) PRVX

Q. 27. Which one is different from the rest three?

- (A) ISEPU (B) YNHIA (C) FHUJU (D) SGRFI

Q. 28. Which one is different from the rest three?

- (A) ZAYB (B) XCWD (C) VEUF (D) TSGH

Q. 29. Find that pair of numbers which is not related to other pairs of numbers due to lack of common property.

- (A) 47, 59 (B) 42, 29 (C) 57, 69 (D) 73, 61

Q. 30. Which one is different from the rest three?

- (A) Cycle (B) Scooter (C) Car (D) Tonga

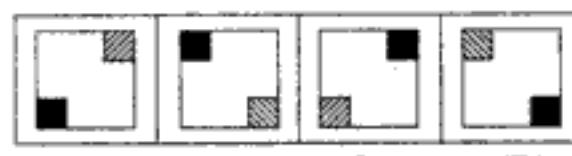
Q. 31. Which one is different from the rest three?

- (A) Herb (B) Flower (C) Tree (D) Shrub

Q. 32. Find out the set of numbers that does not belong to the group for lack of common property.

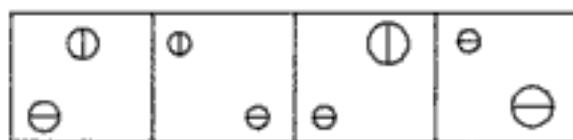
- (A) 22, 4, 5 (B) 34, 4, 8 (C) 37, 4, 9 (D) 54, 4, 13

Q. 33. Given below are four figures. Three are alike in some manner. Find the odd one.



(A) (B) (C) (D)

Q. 34. Given below are four figures. Three are alike in some manner. Find the odd one.



- (A) (B) (C) (D)

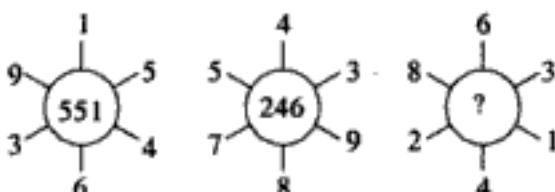
Q. 35. In the following question, the number of letters skipped in between adjacent letters in the series should increase by one. Which of the following observes this rule?

- (A) CEHLQ (B) BFAHJ (C) KLMNO (D) QRTUG

Q. 36. Which one is different from the rest three?

- | | |
|------------------|---------------------|
| (A) Sweet – Sour | (B) Pointed – Blunt |
| (C) Long – High | (D) Hard – Soft |

Q. 37. Which number will come at the sign of interrogation?



- (A) 631 (B) 622 (C) 824 (D) 262

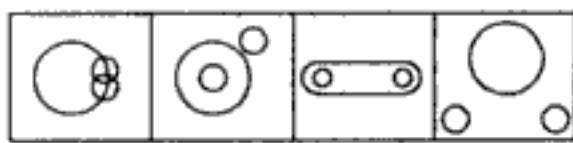
Q. 38. The word TENDER has been coded in four different ways (A, B, C, D). Find out which pattern/rule is used in coding it, if MELLOW is coded as TLSSVD.

- (A) UFOEFS (B) ALUKLY (C) REDNET (D) SDMCDQ

Q. 39. If MATHEMATICS = 1 2 3 4 5 1 2 3 6 7 8, then MAHATHMA = ?

- | | |
|---------------------|---------------------|
| (A) 1 2 4 2 3 4 1 2 | (B) 1 2 3 4 5 1 2 3 |
| (C) 1 2 3 4 5 6 7 8 | (D) 1 2 4 2 5 3 4 1 |

Q. 40. Which of the following figures represents Furniture, Chairs, Tables?



- (A) (B) (C) (D)

Q. 41. If $D = 4$, Cover = 63, then Basis = ?

- (A) 55 (B) 50 (C) 49 (D) 54

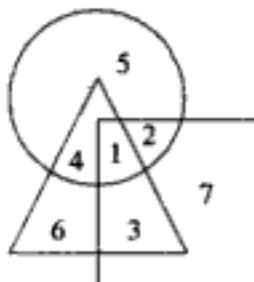
Q. 42. If in a code language, COULD is written as BNTKC and MARGIN is written as LZQFHM, how will MOULDING be written in that code?

- | | |
|--------------|--------------|
| (A) LNTKCHMF | (B) CHMFINTK |
| (C) LNKTCHMF | (D) NITKHCMF |

Q. 43. If MACHINE is coded as 19-7-9-14-15-20-11, how will you code DANGER?

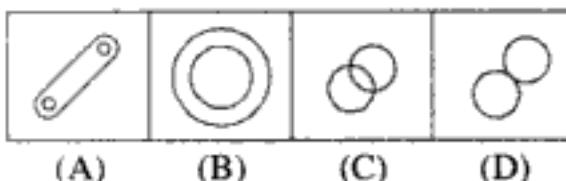
- (A) 13-7-20-10-11-25 (B) 11-7-20-16-11-24
 (C) 10-7-20-13-11-24 (D) 13-7-20-9-11-25

Q. 44. In this given figure, \circ represents the character, Δ represents the honest and \square represents the clever. Find out the characters which are clever but not honest.



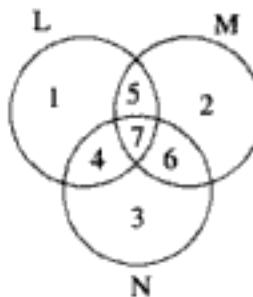
- (A) 1 (B) 2 (C) 3 (D) 4

Q. 45. At an office where an interview was conducted to select persons for clerical posts, they came to know that out of 20 persons, 12 knew only typing and 5 knew only shorthand and the rest knew both typing and shorthand. Which diagram represents this fact?



- (A) (B) (C) (D)

Q. 46. Which number indicates good speakers who are neither post graduates nor doctors?



L—Good Speakers

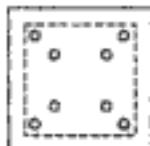
M—Post Graduates

N—Doctors

- (A) 6 (B) 2 (C) 5 (D) 1

Q. 47. A square paper is folded in a particular manner and a punch is made. When unfolded, the paper appears as given below.

Given Figure

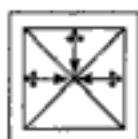


Find out the manner in which the paper is folded and punch is made from the responses given.

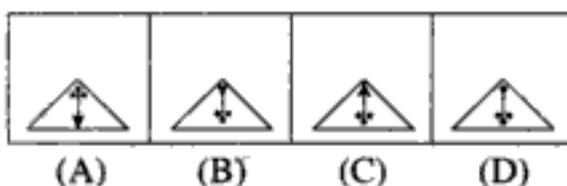
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Q. 51. Which one figure shall complete the given pattern?

Given Figure



Answer Figures

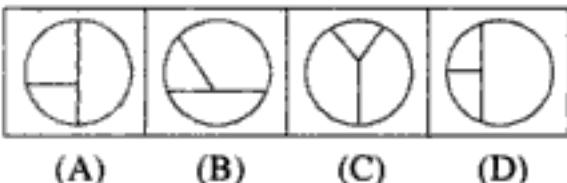


Q. 52. Among the four answer figures which one can be formed by using the given cut-out pieces?

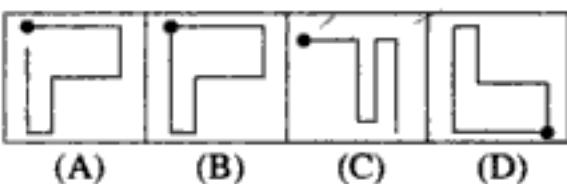
Given Figure



Answer Figures



Q. 53. I travelled eastward 15 km and another 10 km southward. I turned westward and moved for 10 km distance and again another 10 km southward. A travel of another 5 km westward and then 20 km northward ended my journey. Identify the sketch depicting my journey.

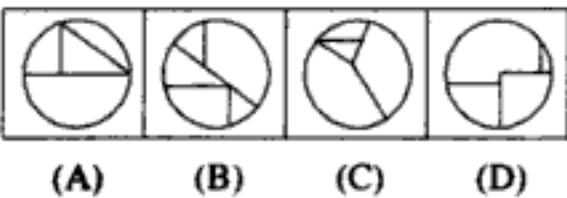


Q. 54. Among the four answer figures which one can be formed by using the given cut-out pieces?

Given Figure



Answer Figures



Q. 55. In the given answers, find out that word which cannot be formed by using the letters of the given word.

ADMINISTRATION

- | | |
|---------------|---------------|
| (A) STRAIN | (B) TRADITION |
| (C) SITUATION | (D) RATION |

Q. 56. In the given answers, find out that word which cannot be formed by using the letters of the given word.

CINEMATOGRAPHY

- | | |
|-----------------|---------------|
| (A) EMINENT | (B) ANIMATION |
| (C) METAMORPHIC | (D) CHROMATID |

Q. 57. In the given answers, find out that word which cannot be formed by using the letters of the given word.

AGRICULTURE

- | | | | |
|-----------|-----------|----------|-------------|
| (A) IRATE | (B) GREAT | (C) LATE | (D) CLIMATE |
|-----------|-----------|----------|-------------|

Q. 58. In the given answers, find out that word which cannot be formed by using the letters of the given word.

RECAPITULATION

- | | |
|-------------|----------------|
| (A) CAPTURE | (B) RELATION |
| (C) PICTURE | (D) TABULATION |

Q. 59. In the following question, a statement is given followed by two assumptions I and II. You are to consider each statement and the assumptions that follow, and decide which of the assumptions is/are implicit in the statement.

Statement: The U.S.A. reemerged as India's largest import source in the early nineties.

Assumptions:

- With swift political developments in the Soviet Union, India began to rely on U.S.A.
 - U.S.A. was the only country which wanted to meet the requirements of India.
- | | |
|--------------------------------|----------------------------------|
| (A) Only I is implicit | (B) Only II is implicit |
| (C) Both I and II are implicit | (D) Neither I nor II is implicit |

Q. 60. In the following question, a statement is given followed by two conclusions I and II. You are to consider each statement and the conclusions that follow, and decide which of the conclusions is/are implicit in the statement.

Statement: India's economy is depending mainly on forests.

Conclusions:

Q. 61. In the following question, a statement is given followed by two assumptions I and II. You are to consider each statement and the assumptions that follow, and decide which of the assumptions is/are implicit in the statement.

Statement: If water pollution continues at its present rate, it will eventually make oxygen molecules unavailable to water plants.

Assumptions:

- I. Water pollution affects the growth of water plants.
II. Water pollution reduces the availability of oxygen in water.

(A) Only I is implicit (B) Only II is implicit
(C) Both I and II are implicit (D) Neither I nor II is implicit

Q. 62. If Dr. Ramesh's theory is correct, then the events he predicts will happen. The events he predicted did happen. Therefore his theory must be correct.

The conclusion drawn in the argument above would be valid if one of the following were true. Find that.

- (A) Only Dr. Ramesh's theory fully explains the events which happened
 - (B) If the events Dr. Ramesh predicted happen, then his theory is correct
 - (C) If Dr. Ramesh's theory is correct, then the events he predicted may happen
 - (D) Only Dr. Ramesh predicted the events which happened.

Q. 63. Find the missing number in the following columns.

$$\begin{array}{r}
 1 & 7 & 9 \\
 2 & 14 & ? \\
 3 & 105 & \underline{117}
 \end{array}$$

- (A) 12 (B) 26 (C) 16 (D) 20

Q. 64. Find the missing number in the following columns.

5	6	7
3	4	5
9	10	11
345	460	?

- (A) 755 (B) 775 (C) 535 (D) 577

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MOCK TEST 5**Test of Reasoning and General Intelligence**

- Q. 1.** If '+' means '÷'; '×' means '−'; '÷' means '+' and '−' means '×', then
 $16 + 8 \times 6 - 2 \div 12 = ?$
 (1) 22 (2) 24 (3) 23 (4) 20 (5) None of these
- Q. 2.** Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?
 (1) IJ (2) MN (3) OP (4) DE (5) PR
- Q. 3.** If white is called blue, blue is called red, red is called yellow, yellow is called green, green is called black, black is called violet and violet is called orange, what would be the colour of human blood?
 (1) Red (2) Yellow (3) Violet (4) Orange (5) Green
- Q. 4.** If it is possible to make a meaningful word with the second, the fifth, the tenth and the twelfth letters of the word METROPOLITAN, which of the following will be the third letter of that word? If no such word can be made, give 'X' as the answer and if more than one such word can be made, give 'M' as the answer.
 (1) N (2) T (3) Q (4) X (5) M
- Q. 5.** What should come in place of the question mark in the following letter series?
 BMK DLM FKO HJQ ?
 (1) JHS (2) JIT (3) JIR (4) JIS (5) None of these
- Q. 6.** In a certain code BARLEY is written as CBTMGZ. How is SOUND written in that code?
 (1) UPWOF (2) UPWPF (3) UQWOF
 (4) TPWOF (5) None of these
- Q. 7.** In a certain code SUBSTITUTION is written as ITSBUSNOITUT. How is DISTRIBUTION written in that code?
 (1) IRTDISNOITUB (2) IRTSIDNOIBUT (3) IRTSIDNOITUB
 (4) IRTDISNOIUTB (5) None of these
- Q. 8.** If the first ten letters of the following alphabet are written in the reverse order, which of the following letters will be the seventh to the left of the twelfth letter from the right end?
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
 (1) H (2) C (3) I (4) B (5) None of these

(Qs. 9-11): (A) There are five friends; (B) They are standing in a row facing south; (C) Jayesh is to the immediate right of Alok; (D) Pramod is between Babir and Subodh; (E) Subodh is between Jayesh and Pramod.

Q. 9. Who is at the extreme left end?

- (1) Alok (2) Babir (3) Subodh
 (4) Data inadequate (5) None of these

Q. 10. Who is in the middle?

- (1) Babir (2) Pramod (3) Subodh (4) Jayesh (5) Alok

Q. 11. To find answers to the above two questions, which of the given statements can be dispensed with?

- (1) None (2) A only (3) B only (4) C only (5) D only

Q. 12. If $A \times B$ means 'A is the brother of B', and $A + B$ means 'A is the father of B', which of the following means 'M is the nephew of N'?

- (1) $N \times K + M$ (2) $N + M \times K$ (3) $M \times K + N$
 (4) Data inadequate (5) None of these

Q. 13. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

- (1) Guava (2) Apple (3) Orange (4) Pear (5) Mango

Q. 14. If in a given number 5894327614, we interchange the first and the second digits, the third and the fourth, the fifth and the sixth and so on, then counting from the right end, which digit will be sixth?

- (1) 3 (2) 2 (3) 4 (4) 5 (5) None of these

Q. 15. How many 4's are there in the following series which are preceded by 7, but are not preceded by 8?

3 4 5 7 4 3 7 4 8 5 4 3 7 4 9 8 4 7 2 7 4 1 3 6

- (1) 1 (2) 2 (3) 3 (4) 4 (5) More than four

Directions (Qs. 16-20): In each question below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts. Give answer (1), if only conclusion I follows; (2), if only conclusion II follows; (3), if either conclusion I or conclusion II follows; (4), if neither conclusion I nor conclusion II follows and (5), if both the conclusions I and II follow.

Q. 16. Statements:

All dogs are jackals.

Some jackals are crows.

Conclusions:

- I. Some dogs are crows.
- II. All dogs are crows.

Q. 17. Statements:

Some pens are hammers.
All hammers are nails.

Conclusions:

- I. Some nails are pens.
- II. Some nails are hammers.

Q. 18. Statements:

All trees are parrots.
No parrot is cat.

Conclusions:

- I. No tree is cat.
- II. Some cats are trees.

Q. 19. Statements:

Some doors are windows.
Some windows are pencils.

Conclusions:

- I. All doors are pencils.
- II. Some pencils are doors.

Q. 20. Statements:

Some boys are tables.
Some tables are chairs.

Conclusions:

- I. Some boys are chairs.
- II. Some chairs are boys.

Directions (Qs. 21-25): Given below is a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.

Mark answer (1), if the inference is "definitely true", i.e., it properly follows from the statement of facts given.

Mark answer (2), if the inference is "probably true" though not "definitely true" in the light of the facts given.

Mark answer (3), if the "data are inadequate", i.e., from the facts given, you cannot say whether the inference is likely to be true or false.

Mark answer (4) if the inference is "probably false" though not "definitely false" in the light of the facts given.

Mark answer (5) if the inference is "definitely false" i.e., it cannot possibly be drawn from the facts given or it contradicts the given facts.

One third population of the country being below poverty line, it is unavoidable that since independence, dominance of Government sponsored programmes have been evident — objective of each of those was to improve the lot of all the poor people. However, success of such programmes have been limited. Even being the excellent desired effect of these programmes, these could never avoid the clutches of bureaucracy. Resulting this that the benefits of the government sponsored programmes could not ultimately reach those people for whom primarily these programmes were prepared.

Q. 21. The rich became more richer in pre-Independence era.

Q. 22. The targeted group has substantially benefitted from the achievements of the programmes.

Q. 23. Bureaucracy has proved to be a speed-breaker in the implementation of welfare programmes.

Q. 24. The Government has never cared for the welfare of the poor.

Q. 25. Government had no sponsored programmes for the welfare of the poor in the pre-Independence era.

Directions (Qs. 26-30): In the each question below is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to consider the statement and the assumptions and decide which of the assumptions is implicit in the statement.

Give answer (1) if only assumption I is implicit. Give answer (2) if only assumption II is implicit. Give answer (3) if either I or II is implicit. Give answer (4) if neither I nor II is implicit, and give answer (5) if both I and II are implicit.

Q. 26. Statement:

The president of the club informed its members that to run the club efficiently, there is an urgent need to raise its resources by voluntary contribution.

Assumptions:

- I. The president's message will be accepted by the members.
- II. The members are capable of making voluntary contributions.

Q. 27. Statement:

The civic authority appealed to the people for reduction in usage of water as there may be an acute shortage during the coming weeks.

Assumptions:

- I. There will be no rain in recent future.
- II. The people are ready to follow the advice of the civic authority.

Q. 28. Statement:

Prabhat purchased a book for giving as a present to his friend on his birthday.

Assumptions:

- Prabhat will be invited by his friend on his birthday.
- Prabhat's friend may not have this particular book.

Q. 29. Statement:

The government, through a notification has banned smoking in public places.

Assumptions:

- People should abide by the notification.
- The message in the notification will reach general public.

Q. 30. Statement:

"Wanted a two bedroom-hall-kitchen flat in the college area" ___ an advertisement.

Assumptions:

- Landlords generally respond to such advertisements.
- Flats may be available in the college area.

Directions (Qs. 31-35): Each of the questions below consist of a question and two statements numbered I and II given below it. You have to decide whether data provided in the statements are sufficient to answer the question. Read both the statements and

Give answer (1) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

Give answer (2) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

Give answer (3) if the data either in statement I or in statement II alone are sufficient to answer the question.

Give answer (4) if the data even in both statements I and II together are not sufficient to answer the question and

Given answer (5) if the data in both statements I and II together are necessary to answer the question.

Q. 31. How many sons does Suresh have?

- Kamal and Suhas are children of Mala.
- Mala is married to Suresh.

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- Q. 47.** Rajesh Gupta has secured 90% marks in the XIIth Std. Science examination with Biology and 60% marks in the entrance test. He was born on 3rd October, 1973. He can pay the admission fees of Rs. 20,000.
- Q. 48.** Sudha Malhotra has secured 70% marks in the entrance test and 60% marks in her XIIth Std. Science examination with Biology. She can pay the admission fee of Rs. 20,000 and was born on 7th November, 1978.
- Q. 49.** Usha Jethmalani has secured 68% marks in her XIIth Std. examination in Science with Biology and has secured 75% marks in the entrance test. She was born on 20th October, 1975. She can pay the admission fee of Rs. 20,000.
- Q. 50.** Meeta Saha has secured 70% and 80% marks in XIIth Std. and entrance test respectively. Her date of birth is 9.6.1976. She can pay the admission fee of Rs. 20,000.

Answers

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (3) | 2. (5) | 3. (2) | 4. (5) | 5. (4) | 6. (4) | 7. (3) |
| 8. (2) | 9. (1) | 10. (3) | 11. (2) | 12. (1) | 13. (3) | 14. (2) |
| 15. (4) | 16. (4) | 17. (4) | 18. (1) | 19. (4) | 20. (4) | 21. (3) |
| 22. (5) | 23. (1) | 24. (5) | 25. (3) | 26. (2) | 27. (2) | 28. (5) |
| 29. (5) | 30. (5) | 31. (4) | 32. (5) | 33. (5) | 34. (4) | 35. (5) |
| 36. (4) | 37. (1) | 38. (3) | 39. (5) | 40. (3) | 41. (5) | 42. (3) |
| 43. (5) | 44. (2) | 45. (1) | 46. (4) | 47. (3) | 48. (2) | 49. (1) |
| 50. (5) | | | | | | |

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Q. 17. If water is called blue, blue is called red, red is called white, white is called sky, sky is called rain, rain is called green, green is called air and air is called table, which of the following is the colour of milk?

- (1) White (2) Rain (3) Sky (4) Green (5) Air

Q. 18. Prabhat remembers that his mother's birthday is after seventeenth April but before twenty-first April, whereas his sister Urmila remembers that their mother's birthday is after nineteenth but before twenty-fourth April. Which of the following days in April is definitely their mother's birthday?

- (1) Nineteenth (2) Twenty-first (3) Twenty-second
 (4) Twentieth (5) None of these

Q. 19. Is 'C' mother of 'D'? To find out the answer which of the following informations given in the statements 'A' and 'B' is/are sufficient?

(A) B has two children of which D is one.

(B) D's sister is daughter of C.

- (1) Both A and B together are needed
 (2) Both A and B together are not sufficient
 (3) Only A is sufficient
 (4) Only B is sufficient
 (5) Either A or B is sufficient

Directions (Qs. 20-21): (A) Gopal is shorter than Ashok but taller than Kuhav; (B) Navin is shorter than Kuhav; (C) Jayesh is taller than Navin; (D) Ashok is taller than Jayesh.

Q. 20. Who among them is the tallest?

- (1) Gopal (2) Ashok (3) Jayesh (4) Navin (5) Kuhav

Q. 21. Which of the following informations is not necessary to answer the above question?

- (1) A (2) B (3) C (4) D (5) All are necessary

Q. 22. A is B's brother. A is C's brother. To find out how B is related to C, which of the following is the minimum further information necessary, if any?

I. C's sex II. B's sex

- (1) Only I is necessary (2) Only II is necessary
 (3) Either I or II is necessary (4) Both I and II are needed
 (5) Neither I nor II is necessary

Directions (Qs. 23-24): In a certain code language—

- (A) '1 3 4' means 'you are well'
 (B) '7 5 8' means 'they go home'
 (C) '8 3 9' means 'we are home'

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Q. 35. India can compete with the foreign countries in regard to the price of steel with a favourable government policy.

- (1) Definitely true (2) Data inadequate (3) Probably false
 (4) Probably true (5) Definitely false

Directions (Qs. 36-40): In each question below is given a statement followed by three assumptions numbered I, II and III. An assumption is something supposed or taken for granted. You have to consider the statement and the assumption, and decide which of the assumptions is implicit in the statement. Then decide which of the answers, (1), (2), (3), (4) and (5) is correct.

Q. 36. Statement:

The national air carrier has decided to start a weekly air service from town 'A' to tow 'B'.

Assumptions:

- I. There will be enough passengers to make the operation economically viable.
 - II. Other carriers may not start such service.
 - III. The people staying around these towns can afford the cost of air travel.
- (1) All are implicit (2) Only I is implicit
 (3) Both II and III are implicit (4) Both I and II are implicit
 (5) None of these

Q. 37. Statement:

"Wanted a two bedroom flat in the court area for immediate possession" — advertisement.

Assumptions:

- I. Flats are available in court area.
 - II. Some people will respond to the advertisement.
 - III. It is a practice to give such an advertisement.
- (1) None is implicit (2) Only I and II are implicit
 (3) Only II is implicit (4) All are implicit
 (5) None of these

Q. 38. Statement:

A group of friends decided to go for a picnic to Avon during the next holiday season to avoid crowd of people.

Assumptions:

- I. Generally many people do not go to Avon.
- II. People prefer other spots to Avon.
- III. Many people do not know about Avon.

O. 39. Statement:

Considering the tickets sold during the last seven days, the circus authorities decided to continue the show for another fortnight which includes two weekends.

Assumptions:

O. 40. Statement:

The telephone company informed the subscribers through a notification that those who do not pay their bills by the due date will be charged penalty for every defaulting day.

Assumptions:

- I. Majority of the people may pay their bills by the due date to avoid penalty.
 - II. The money collected as penalty may set off the losses due to delayed payment.
 - III. People generally pay heed to such notices.
 - (1) None is implicit
 - (2) Only II and III are implicit
 - (3) Only I and II are implicit
 - (4) All are implicit
 - (5) None of these

Directions (Qs. 41-45): Study the following information carefully and answer the questions given below it.

- (i) A, B, C, D, E and F are six members in a family in which there are two married couples.
 - (ii) D is brother of F. Both D and F are lighter than B.
 - (iii) B is mother of D and lighter than E.
 - (iv) C, a lady, is neither heaviest nor the lightest in the family.
 - (v) E is lighter than C.
 - (vi) The grandfather in the family is the heaviest.

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Q. 47. Sudha Mirchandani has secured 95% marks in XIIth standard science stream and 70% marks in the entrance test. She can pay only 65% of the requisite tuition fees and admission charges.

Q. 48. Reema Jaiswal was born on 20th July, 1974. She has secured 85% and 75% marks in XIIth standard with science and entrance test respectively. She can pay the requisite tuition fees and admission charges.

- (1) Refer to Chairman-Admission (2) Refer to Admission Committee
(3) Data inadequate (4) Do not admit
(5) Admit

Q. 49. Subodh Mohaptara was 19 years old as on 20th December, 1993. He has secured 98% marks in XIIth standard examination with science and 80 marks in the entrance test. He can pay the requisite tuition fees and admission charges.

Q. 50. Ashok Dubey was born on 27th November, 1974. He has secured 90% marks in the XIIth standard examination with science and 95 marks in the entrance test. He can pay Rs. 10,000 tuition fees and Rs. 3,500 admission charges.

Answers

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (5) | 2. (3) | 3. (5) | 4. (2) | 5. (2) | 6. (3) | 7. (3) |
| 8. (5) | 9. (4) | 10. (1) | 11. (4) | 12. (2) | 13. (5) | 14. (3) |
| 15. (3) | 16. (5) | 17. (3) | 18. (4) | 19. (2) | 20. (2) | 21. (3) |
| 22. (3) | 23. (5) | 24. (1) | 25. (4) | 26. (2) | 27. (3) | 28. (5) |
| 29. (2) | 30. (4) | 31. (2) | 32. (4) | 33. (5) | 34. (1) | 35. (1) |
| 36. (1) | 37. (3) | 38. (1) | 39. (2) | 40. (5) | 41. (1) | 42. (4) |
| 43. (5) | 44. (5) | 45. (3) | 46. (1) | 47. (3) | 48. (4) | 49. (5) |
| 50. (3) | | | | | | |

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Q. 14. Statement:

A Notice Board at a ticket window, 'Please come in queue'

Assumptions:

- Unless instructed people will not form queue.
- People any way want to purchase tickets.

Q. 15. Statement:

We must settle all the payment due to our suppliers within three working days.

Assumptions:

- We will always have necessary funds in our account to settle the bills.
- We are capable of verifying and clearing the bills in less than three working days.

Directions (Qs. 16–20): In the following questions, the symbols *, $\underline{\underline{=}}$, =, @ and $\underline{=}$ are used with the following meanings:

$A * B$ means A is greater than B,

$A \underline{\underline{=}} B$ means A is either greater than or equal to B,

$A = B$ means A is equal to B,

$A @ B$ means A is smaller than B and

$A \underline{=} B$ means A is either smaller than or equal to B.

Now in each of the following questions, assuming the three statements to be true, state which of the two conclusions I and II given below them is definitely *true*?

Give answer (1) if only conclusion I is true; give answer (2) if only conclusion II is true; give answer (3) if either I or II is true; give answer (4) if neither I nor II is true and give answer (5) if both I and II are true.

Q. 16. Statements:

$$L @ C, C * Z, Z \underline{=} F$$

Conclusions:

- | | |
|------------|-------------|
| I. $C * F$ | II. $F = C$ |
|------------|-------------|

Q. 17. Statements:

$$Z @ B, N \underline{\underline{=}} S, B @ N$$

Conclusion:

- | | |
|------------|-------------------------|
| I. $B = Z$ | II. $S \underline{=} B$ |
|------------|-------------------------|

Q. 18. Statements:

$$M = T, T \underline{=} Z, S * M$$

Conclusion:

- | | |
|------------|-------------|
| I. $Z * M$ | II. $Z = M$ |
|------------|-------------|

Q. 19. Statements:

$$T \underset{=}{\sim} P, P @ S, P = M$$

Conclusions:

- I. $S * M$ II. $T @ S$

Q. 20. Statements:

$$R \underset{=}{\sim} M, M * P, R \underset{=}{\sim} L$$

Conclusions:

- I. $M = L$ II. $P = L$

Directions (Qs. 21–28): Read the following information carefully and answer the questions given below.

Following are the conditions for drawing a list of suitable candidates to be called for interview after a written test for recruitment is conducted for supervisory level persons for a reputed company providing software and services.

The candidate must

- (a) be holding a degree in basic science with 60% or above or engineering degree with 45% and above marks.
- (b) have passed the written examination with 65% or above marks.
- (c) be in the age group of 24 years to 30 years as on 1.4.1997.
- (d) have experience in a computer company for a minimum period of 3 years after having obtained diploma in computer with 60% or above marks.
- (e) be presently drawing a monthly salary of Rs. 8,000 and above.

In case of the applicant, who satisfies all other criteria except

- (I) at (a) above, be referred to the Manager (Recruitment).
- (II) at (b) above but has obtained more than 75% marks in M.Sc. or Engineering degree, be referred to the Assistant General Manager (A.G.M.).
- (III) at (c) above, be referred to the General Manager (G.M.).

Based on these criteria and information provided below, decide the course of action in each case. You are not to assume anything. If the data provided is not adequate to decide the given course of action, your answer will be "data inadequate". The cases are given to you as on 1.4.1997.

Q. 21. Niranjan Singh did his diploma in computers at the age of 22 years after completing his B.Sc. Immediately after completing his diploma, he got job in a computer company and is employed for the last four years with a salary of Rs. 10,500. He has got more than 65% marks in all the examinations including the written examination.

- | | |
|-------------------------------|--|
| (1) Data inadequate | (2) Refer to Manager (Recruitment) |
| (3) Do not call for interview | (4) Refer to Assistant General Manager |
| (5) Call for interview | |

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Q. 27. Bimbadevi, aged 27 years, is a graduate in Science with computers and has been working for the last three and half years in a firm. Her present monthly salary is Rs. 10,500/- She has passed matriculation, diploma and written examinations respectively.

- (1) Do not call for interview
- (3) Refer to Manager
- (5) Call for interview

Q. 28. K-

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answer the question, while the data in statement II alone are not sufficient to answer the question; give answer (2) if the data in statement II alone are sufficient to answer the question; give answer (3) if the data in statement I alone are sufficient to answer the question; give answer (4) if the data either in statement I alone or in statement II alone are sufficient to answer the question; give answer (5) if the data even in both the statements I and II together are not sufficient to answer the question; give answer (6) if the data in both the statements I and II together are necessary to answer the question.

Q. 34. How much amount Chandramauli required to pay for the new car in buy-back scheme?

- I. The cost of the new car was three times the cost price of his old car.
- II. His old car was valued at Rs. 25,000 under buy-back scheme.

Q. 35. How many new year's greeting cards were sold this year in your buy-back scheme?

- I. Last year 2935 cards were sold.
- II. The number of cards sold this year was 1.2 times that of last year.

Q. 36. What is the exact duration of this course?

- I. It has three semesters but there is internship in between third semester.
- II. Duration of the internship varies as per the report of the institution.

Q. 37. At what time did Suresh leave his home for office?

- I. Suresh received a phone call at 9.15 a.m. at his home residence.
- II. Suresh's car reached office at 10.15 a.m., 45 minutes late.

Q. 38. What is the area of this plot?

- I. The perimeter of the plot is 208 meters.
- II. The length is more than the breadth by 4 meters.

Directions: (Qs. 39-43): In each question below is given a statement to be true, then consider the two conclusions numbered I and II. You have to decide which conclusion(s) follows logically from the statement.

Give answer (1) if only conclusion I follows;

give answer (2) if only conclusion II follows;

give answer (3) if either I or II follows;

give answer (4) if both I and II follow;

give answer (5) if neither I nor II follows.

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Q. 29. Statement:

Som

Some

Conclus

(I) Some

(III) Some

(1) Only I, II.

(2) Only I, II an

(3) Only I, II and

(4) None of these

(5) All follow

Q. 30. Statements:

All crystals are magnets.

Some magnets are chocolates.

Conclusions:

(I) Some magnets are crystals.

(II) Some chocolates are not ma

Q. 22. Kamalnath has been working in a computer company for the last 6 years after completing his diploma in computers with 62% marks. He has passed his Engineering degree and written examination with 55% and 68% marks respectively. He has completed 28 years of age in September 1995.

- (1) Data inadequate
- (2) Do not call for interview
- (3) Call for interview
- (4) Refer to G.M.
- (5) Refer to A.G. M.

Q. 23. Dipti Sahi is working in supervisory capacity for the last 4 years in a computer company after having completed her Engineering degree with 55% and diploma in computers with 70% marks. She has secured 72% marks in the written examination. Her date of birth is 15 January, 1967 and her present salary is Rs. 10,000.

- (1) Data inadequate
- (2) Call for interview
- (3) Do not call for interview
- (4) Refer to Manager (Recruitment)
- (5) Refer to General Manager

Q. 24. Jemina Khan completed her B.Sc. at the age of 21 years, completed her one year's diploma in computers immediately and got a job from June 1994. She draws a monthly salary of Rs. 11,000. She has cleared all her examinations including written examination with a minimum of 68% marks.

- (1) Refer to G.M.
- (2) Refer to A.G.M.
- (3) Refer to Manager (Recruitment)
- (4) Do not call for interview
- (5) Data inadequate

Q. 25. Anand Gupta has done his Master's degree in Science and then completed his diploma in computers with 64% marks from a reputed institute. For the last 4 years, he has been working in a computer company. His age is 27 years and his present salary is Rs. 8,500. He obtained 68% marks in the written examination.

- (1) Refer to Manager
- (2) Data inadequate
- (3) Call for interview
- (4) Do not call for interview
- (5) Refer to Assistant General Manager

Q. 26. Jemi Desouza, born on 12.2.1968, is employed in a computer company for the last five years and is presently drawing a monthly salary of Rs. 9,500. He has successfully completed his degree in Engineering with 64% marks, diploma in computers and written examination with 65% and 60% marks respectively.

- (1) Do not call for interview
- (2) Call for interview
- (3) Data inadequate
- (4) Refer to G.M.
- (5) Refer to Manager (Recruitment)

Q. 27. Bimbadevi, aged 27 years, is a graduate in Science with diploma in computers and has been working for the last three and half years in a computer firm. Her present monthly salary is Rs. 10,500. She has passed her graduation, diploma and written examination with 55%, 70% and 68% marks respectively.

- (1) Do not call for interview (2) Refer to G.M.
(3) Refer to Manager (Recruitment) (4) Data inadequate
(5) Call for interview

Q. 28. Kasam Bhure did his B.Sc. with 70% marks followed by diploma in computers with 69% marks. He is employed from June 1993 in a computer firm with a salary of Rs. 9,700. He was born in October 1973. He has passed the written examination with 72% marks.

Directions (Qs. 29–33): In each question below are given two statements followed by four conclusions numbered I, II, III and IV. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts. Read all conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

O, 29, *Statements:*

Some caps are tanks.

Some tanks are bulbs.

Conclusions:

O. 30. *Statements:*

All crystals are magnets.

Some magnets are chocolates.

Conclusions:

- (I) Some magnets are crystals.
 (II) Some chocolates are not magnets.

- (III) No chocolate is crystal.
 (IV) All magnets are crystals.
 (1) Only I, II and IV follow
 (3) None of these
 (5) Only II and III follow

- (2) Only I, II and III follow
 (4) None follows

Q. 31. Statements:

No boat is shop.
 All shops are guns.

Conclusions:

- (I) All boats are guns.
 (III) Some guns are shops.
 (1) Only either I or II follow
 (3) Only II follows
 (5) None of these

- (II) No boat is gun.
 (IV) All guns are shops.
 (2) Only I follows
 (4) Only III and IV follow

Q. 32. Statements:

All bags are chalks.
 All chalks are bottles.

Conclusions:

- (I) Some bottles are bags.
 (III) All bottles are bags.
 (1) Only I, III and IV follow
 (3) None of these
 (5) All follow

- (II) All bags are bottles.
 (IV) Some chalks are not bags.
 (2) Only II, III, IV follow
 (4) Only I, II and IV follow

Q. 33. Statements:

Some frogs are bricks.
 All bricks are cakes.

Conclusions:

- (I) Some cakes are not frogs.
 (III) No cake is frog.
 (1) Only I and II follow
 (3) None follows
 (5) Only I, II and IV follow

- (II) Some cakes are frogs.
 (IV) All frogs are cakes.
 (2) All follow
 (4) Only II, III and IV follow

Directions (Qs. 34–38): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer (1) if the data in statement I alone are sufficient to

answer the question, while the data in statement II alone are not sufficient to answer the question; give answer (2) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question; give answer (3) if the data either in statement I alone or in statement II alone are sufficient to answer the question; give answer (4) if the data even in both the statements I and II together are not sufficient to answer the question; give answer (5) if the data in both the statements I and II together are necessary to answer the question.

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- I. It has three semesters but there is internship in between second and third semester.
- II. Duration of the internship varies as per the report of the professor.

Q. 37. At what time did Suresh leave his home for office?

- I. Suresh received a phone call at 9.15 a.m. at his home.
- II. Suresh's car reached office at 10.15 a.m., 45 minutes after he left his residence.

Q. 38. What is the area of this plot?

- I. The perimeter of the plot is 208 meters.
- II. The length is more than the breadth by 4 metres.

Directions: (Qs. 39–43): In each question below is given a statement followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

Give answer (1) if only conclusion I follows; give answer (2) if only conclusion II follows; give answer (3) if either I or II follows; give answer (4) if neither I nor II follows; and give answer (5) if both I and II follow.

Q. 39. Statement:

While presenting a stage show recently, the famous actor declared that he has a practice of either taking full payment or none for his stage show.

Conclusions:

- I. The actor has taken full payment for his recent stage show.
- II. The actor did not take any money for his recent stage show.

Q. 40. Statement:

The national norm is 100 beds per thousand population but in this State, 150 beds per thousand are available in the hospitals.

Conclusions:

- Our national norm is appropriate.
- The State's health system is taking adequate care in this regard.

Q. 41. Statement:

From the next academic year, students will have the option of dropping Mathematics and Science for their school leaving certificate examination.

Conclusions:

- Students who are weak in Science and Mathematics will be benefitted.
- Earlier students did not have the choice of continuing their education without taking these subjects.

Q. 42. Statement:

The best evidence of India's glorious past is the growing popularity of Ayurvedic medicines in the West.

Conclusions:

- Ayurvedic medicines are not popular in India.
- Allopathic medicines are more popular in India.

Q. 43. Statement:

Good voice is a natural gift but one has to keep practising to improve and excel well in the field of music.

Conclusions:

- Natural gifts need nurturing and care.
- Even though your voice is not good, one can keep practising.

Directions (Qs. 44–48): Read the following instructions carefully and answer the questions given below.

A big exhibition has been arranged in the XYZ ground. There is a stream of visitors visiting it from 8 a.m. to 7 p.m. Following practice is observed while selling the tickets.

- Exhibition is arranged in 10 sections, named E, F, G, H, I, J, K, L, M, N.
- Visitors are expected to follow a particular sequence of sections to avoid crowding of people in a section.
- The sequence of visit of sections is printed on the ticket.
- The sequence is changed after every batch of 25 visitors.

(V) The sequence of sections given on tickets of 3 batches is as follows:

First Batch : E F G H I J K L M N

Second Batch : J E F G H I N K L M

Third Batch : I J E F G H M N K L

Continuing this logic, answer the questions given below.

Q. 44. If every section takes 10 minutes, then batch fifth, which entered section I at 9 a.m., will be through last section at what time?

- (1) 9.50 a.m. (2) 10 a.m. (3) 10.10 a.m.
 (4) 10.20 a.m. (5) None of these

Q. 45. Which batch will have the sequence E F G H I J M N K L on their tickets?

- (1) Fourth (2) Fifth (3) Sixth
 (4) Seventh (5) None of these

Q. 46. Which batch will begin with section J and will visit section K in the end?

- (1) Ninth (2) Eighth (3) Seventh
 (4) Sixth (5) None of these

Q. 47. If a batch is to visit section H first and section K at the end, which batch it would be?

- (1) Tenth (2) Eighth (3) Fourth
 (4) Sixth (5) None of these

Q. 48. What will be the number of visitors at the end of batch having the sequence H I J E F G N K L M ?

- (1) 300 (2) 250 (3) 225
 (4) 275 (5) None of these

Directions (Qs. 49–52): Read the following information and answer the questions given below:

- (i) Eight doctors P, Q, R, S, T, U, V and W visit a charitable dispensary run by Shram-Mandir Trust every day except on a holiday, i.e. Monday.
- (ii) Each doctor visits for 1 hour from Tuesday to Sunday except Saturday. The timings are 9 a.m. to 1 p.m. and 2 p.m. to 6 p.m., 1 p.m. to 2 p.m. is lunch break.
- (iii) On Saturday, it is open only in the morning, i.e. 9 a.m. to 1 p.m. and each doctor visits for only half an hour.
- (iv) No other doctor visits the dispensary before doctor 'Q' and after doctor 'U'.
- (v) Doctor 'W' comes immediately after lunch break and is followed by 'R'.
- (vi) 'S' comes in the same order as 'P' in the afternoon session.

Q. 49. At what time the visit of Doctor 'R' is over on Sunday?

- (1) 3 p.m. (2) 4 p.m. (3) 5 p.m. (4) 1 p.m. (5) None of these

Q. 50. If the lunch break and subsequent visiting hours are reduced by 15 minutes, at what time Doctor 'U' is expected to attend the dispensary?

- (1) 3.15 p.m. (2) 4.15 p.m. (3) 4.45 p.m.
 (4) 4 p.m. (5) None of these

Q. 51. At what time the visit of Doctor 'T' would be over on Saturday?

- (1) 10 a.m. (2) 11 a.m.
 (3) Either 10 a.m. or 11 a.m. (4) Data inadequate
 (5) None of these

Q. 52. Doctor 'P' visits in between which of the following pairs of doctors?

- (1) R and W (2) S and T (3) U and W
 (4) S and V (5) None of these

Directions (Qs. 53–55): Read the following information and answer the questions given below.

- (I) Kundanmal is available at home between 12 noon to 4 p.m. on Tuesday, Thursday and Sunday.
 (II) His younger brother Nainamal is available at home on Monday, Thursday, Friday and Sunday between 10 a.m. to 2 p.m.
 (III) The eldest brother Jethamal is available between 9 a.m. to 12 noon on Monday, Wednesday and Thursday and 2 p.m. to 4 p.m. on Friday, Saturday and Sunday.

Q. 53. For how many days only one brother is available at a particular time in a week?

- (1) Four (2) Three (3) Two (4) One (5) None of these

Q. 54. At a time, on which day of a week all the three brothers are available at home?

- (1) Sunday (2) Thursday
 (3) None (4) Cannot be determined
 (5) None of these

Q. 55. On which day(s) of a week, the youngest and the eldest brothers are available at home at the same time?

- (1) Only Monday (2) Only Thursday
 (3) Only Friday (4) Both Monday and Thursday
 (5) Both Sunday and Friday

Directions (Qs. 56 to 60): Below is given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.

Mark answer (1), if the inference is "definitely true", i.e. it properly follows from the statement of facts given; mark (2), if the inference is "probably true"

though not" definitely true" in the light of the facts given; mark (3), if the data are inadequate, i.e. from the facts given you cannot say whether the inference is likely to be true or false; mark (4), if the inference is "probably false" though not "definitely false" in the light of the facts given and mark (5), if the inference is "definitely false", i.e. it cannot possibly be drawn from the facts given or it contradicts the given facts.

Urban lifestyles, fast foods, changing diet patterns, lack of exercise, obesity and smoking are responsible for increase in the incidence of diabetes, heart attacks and cancer. Research has also shown that modern cooking oils have an unhealthy ratio of harmful fatty acids to essential fatty acids which contribute to free radical attacks and increase insulin resistance.

Ghee, coconut oil and mustard oil have a healthy ratio of fatty acids. Their use in rural India, coupled with a traditional high fibre diet and physical exercise, probably account for the lower incidence of diabetes and heart attacks in the rural population, the study reveals.

- Q. 56.** Rural people should not migrate to urban cities if they value their health.
- Q. 57.** Most of the rural population is healthy and free of diseases.
- Q. 58.** Urban health conscious people can stop using modern cooking oils and reduce chances of occurrence of these diseases.
- Q. 59.** Only cooking oil is responsible for rise in the incidences of diseases like heart attacks, cancer etc.
- Q. 60.** The increase in diseases like diabetes, heart attacks, etc. is controllable by taking proper measures.

Answers

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (1) | 2. (5) | 3. (2) | 4. (4) | 5. (2) | 6. (4) | 7. (3) |
| 8. (4) | 9. (4) | 10. (3) | 11. (1) | 12. (4) | 13. (4) | 14. (5) |
| 15. (5) | 16. (4) | 17. (4) | 18. (3) | 19. (1) | 20. (4) | 21. (5) |
| 22. (1) | 23. (5) | 24. (4) | 25. (2) | 26. (1) | 27. (3) | 28. (4) |
| 29. (3) | 30. (3) | 31. (5) | 32. (4) | 33. (1) | 34. (5) | 35. (5) |
| 36. (4) | 37. (2) | 38. (5) | 39. (3) | 40. (2) | 41. (5) | 42. (4) |
| 43. (1) | 44. (5) | 45. (4) | 46. (2) | 47. (3) | 48. (2) | 49. (2) |
| 50. (4) | 51. (3) | 52. (5) | 53. (5) | 54. (3) | 55. (4) | 56. (3) |
| 57. (1) | 58. (1) | 59. (3) | 60. (1) | | | |

MOCK TEST 8

Directions (Qs. 1–4): Study the following letter-number sequence and answer the questions given below.

K W C R M 9 F A 2 H S T Y 6 G L O 4 X U Q E J 7 N P D

- Q. 1.** If every alternate position is dropped in the above sequence beginning with dropping 'W', which of the following will be second to the right of the sixth position from your left?
- (1) G (2) A (3) Y (4) 2 (5) None of these
- Q. 2.** Which of the following will come in place of the question mark (?) in the following sequence with reference to the above group of letters-numbers?
WRF, MFH, AHY, ?
- (1) 6LX (2) HTG (3) SYL (4) HYL (5) None of these
- Q. 3.** Which of the following will be fourth to the right of the fifteenth letter/number from your right?
- (1) 4 (2) O (3) L (4) H (5) None of these
- Q. 4.** If it is possible to make a meaningful word with the fifth, the eighth, the twenty-second and the twenty-fifth letters from left in the above series, which of the following will be the first letter of that word? If no such word can be made, give 'X' as the answer. If more than one such word can be made, give 'P' as the answer.
- (1) N (2) M (3) A (4) X (5) P
- Q. 5.** 'Buses for Chakan leave every twenty-five minutes from this depot'. The enquiry clerk told a passenger, 'One bus for Chakan has left by ten minutes to 2 p.m.'. At what time will the next bus leave for Chakan?
- (1) 2.25 p.m. (2) 2.05 p.m. (3) 2.20 p.m. (4) 2.35 p.m.
(5) None of these
- Q. 6.** 'Command' is related to 'Order' in the same way as 'Confusion' is related to
 (1) Discipline (2) Clarity (3) Chaos (4) Problem
 (5) Difficulty
- Q. 7.** One day evening before sunset two friends Sudhir and Montu were talking to each other face to face. If Montu's shadow was exactly to his right side, which direction was Sudhir facing?
- (1) South (2) North (3) West
 (4) Data inadequate (5) None of these
- Q. 8.** How many pairs of letters are there in the word "TRIANGLE" which have as many letters between them in the word as in the alphabet?
- (1) Four (2) Three (3) Two (4) One (5) None of these

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Directions (Qs. 26–30): In each question below is given a statement followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

Give answer (1) if only conclusion I follows; give answer (2) if only conclusion II follows; give answer (3) if either I or II follow; give answer (4) if neither I nor II follows, and give answer (5) if both I and II follow.

Q. 26. Statement:

This world is neither good nor evil; each man manufactures a world for himself.

Conclusions:

- I. Some people find this world quite good.
- II. Some people find this world quite bad.

Q. 27. Statement:

The standard of education in private schools is much better than municipal and zilla parishad-run schools.

Conclusions:

- I. The municipal and zilla parishad should make serious efforts to improve standard of their schools.
- II. All municipal and zilla parishad schools be closed immediately.

Q. 28. Statement:

The Prime Minister emphatically stated that his government will make every possible effort for the upliftment of poor farmers and farmhands.

Conclusions:

- I. Except poor farmers and farmhands, all others have got benefits of fruits of development.
- II. No serious efforts have been made in the past for upliftment of any section of the society.

Q. 29. Statement:

The party president has directed that no member of the party will give press briefing or interviews to government and private T.V. channels about the discussion in scheduled meeting of the party.

Conclusions:

- I. Party numbers will observe this directive of the president.
- II. The general public will not come to know about the happenings in the scheduled meeting of the party.

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- (ii) From Monday to Friday first bus leaves at 8 a.m. sharp, subsequent bus leaves alternatively after a gap of 45 minutes, followed by 30 minutes, again 45 minutes and 35 minutes and so on.
 - (iii) On Saturday and Sunday, first bus leaves at 7.30 a.m. and others follow regularly after a gap of 1 hour.
 - (iv) Bus 'Q' leaves immediately after 'M' and is immediately followed by 'S'.
 - (v) Bus 'O' is not followed by any other bus.
 - (vi) Bus 'R' leaves immediately before 'M' but not immediately after 'P'.

Q. 46. On Sunday, when bus 'P' completes its tour, which of the following buses begins its tour?

- (1) Q (2) S (3) O
(4) Data inadequate (5) None of these

Q. 47. If the time gap after bus 'M' leaves on Saturday-Sunday is increased by 30 minutes for the subsequent trips, at what time, tour of bus 'O' will be completed?

- (1) 3 p.m. (2) 2 p.m. (3) 6 p.m. (4) 7 p.m. (5) None of these

Q. 48. At what time, bus 'R' completes its tour on Wednesday?

- (1) 9.15 p.m. (2) 1.15 p.m. (3) 1.30 p.m.
 (4) Data inadequate (5) None of these

Q. 49. At what time, bus 'M' leaves on Saturday?

- (1) 10 a.m. (2) 9.45 a.m. (3) 10.30 a.m.
(4) Data inadequate (5) None of these

Q. 50. If the time gap between two busess is uniformly kept as 45 minutes from Monday to Friday, then the beginning of tour of bus 'O' will mark completion of tour of which of the following buses?

Directions (51–53): Study the following information and answer the questions given below:

- (i) Navin, Geeta, Lalit, Vilas and Kumar are five executives of a company based at Hyderabad.
 - (ii) Everyday of next week, only one person is scheduled to go on office tour between Monday and Friday.
 - (iii) Each one is scheduled to visit only one of the following cities— Delhi, Mumbai, Calcutta, Chennai and Bangalore.
 - (iv) One, who will visit Calcutta, will be leaving exactly in the middle day of the week days given above.
 - (v) Vilas will not go to Chennai but will help Navin to go to Mumbai on Tuesday.

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- (3) Not eligible
- (4) Eligible (vi) and (ii) only
- (5) Eligible (i), (ii) and (v) only

Q. 55. Dev Prakash, aged 14 years, is son of an ex-serviceman, Ramsingh. Ramsingh is the president of local senior citizen organisation. Dev Prakash desires to pay 10 years fee in 5 installments over a span of three years.

- (1) Eligible (iv) only
- (2) Eligible (viii) and (vi) only
- (3) Not eligible
- (4) Eligible (iv) and (vi) only
- (5) Eligible (i) and (vii) only

Q. 56. Ketan Bhuria, aged 28 years, is the grandson of one of the patron members, is a social worker and founder of a registered trust running a blood bank. His father is a government servant and an honorary coach in this club.

- (1) Not eligible
- (2) Eligible (i) only
- (3) Eligible (viii) only
- (4) Eligible (vi) only
- (5) Eligible (i) and (vii) only

Q. 57. Anju Nalawade is a daughter of a patron and a junior college student of 18 years. She is a good swimmer and her younger sister is physically handicapped and a chess player. Her father is a retired government employee.

- (1) Not eligible
- (2) Eligible (i), (ii) and (iii) only
- (3) Eligible (i) and (v) only
- (4) Eligible (iii) and (viii) only
- (5) Eligible (ii) and (iv) only

Q. 58. Ganpat Patil, aged 58 years, is a former coach of swimming in Delhi, a retired government officer. His wife is an Army doctor. Patil is a social worker of repute and member of several registered trusts.

- (1) Eligible (iii) and (vii) only
- (2) Not eligible
- (3) Eligible (vi) only
- (4) Eligible (iv) and (vi) only
- (5) Eligible (iii), (vi) and (viii) only

Q. 59. Shilpa Guleria is a student of Sudha English School. Her father is a senior government officer. Her uncle is a wing commander in defence force. She participates in interschool matches.

- (1) Eligible (iv) only
- (2) Eligible (v) only
- (3) Eligible (vii) only
- (4) Eligible (i) and (vii) only
- (5) Not eligible

Q. 60. Suman Arya, aged 24 years, is the daughter-in-law of Narasi—a veteran freedom fighter and social worker. She is employed in bank and desires to make cash payment of fee of 7 years. Her husband is an officer in the Indian Army.

- | | |
|-----------------------------------|----------------------------------|
| (1) Not eligible | (2) Eligible (iii) and (vi) only |
| (3) Eligible (iv) only | (4) Eligible (iv) and (v) only |
| (5) Eligible (viii) and (v) only. | |

Answers

1. (1)	2. (3)	3. (2)	4. (5)	5. (5)	6. (3)	7. (1)
8. (3)	9. (2)	10. (3)	11. (3)	12. (1)	13. (1)	14. (3)
15. (3)	16. (4)	17. (4)	18. (4)	19. (4)	20. (2)	21. (5)
22. (4)	23. (4)	24. (1)	25. (4)	26. (5)	27. (1)	28. (4)
29. (5)	30. (5)	31. (1)	32. (1)	33. (3)	34. (1)	35. (5)
36. (2)	37. (5)	38. (4)	39. (5)	40. (5)	41. (4)	42. (1)
43. (2)	44. (4)	45. (3)	46. (5)	47. (5)	48. (4)	49. (3)
50. (5)	51. (3)	52. (3)	53. (1)	54. (1)	55. (1)	56. (4)
57. (3)	58. (3)	59. (2)	60. (4)			

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