GAT GENERAL

GRADUATE ASSESSMENT TEST

Analytical Reasoning

- Analytical Reasoning is based on a set of relationships laid out, generally arbitrarily, from which new information can be deduced. Analytical Reasoning, as the name suggests involves two steps – first of analysis and second of reasoning. In Analytical Reasoning, the scattered information given in the outline portion of the question is to be arranged. The outline is that part of the Analytical Reasoning Test which describes a certain situation in the form of a small passage or numbered statements. The outline information is usually presented first and then some questions are given which are to be answered by drawing inferences from the outline.
- Analytical Reasoning requires three basic skills—student's ability to structure a given problem, his/her persistence and willingness to try different approaches to crack a problem, and an ability to reason logically. Analytical Reasoning questions directly attack and stimulate several basic thought functions such as memory and concept formation, attention, concentration, anticipation and visual organisation etc.
- Analytical Reasoning questions can be framed in various ways. To answer such questions, first you have to arrange the information in a proper order or sequence. There are no set formulae to solve this kind of problem, practice is the only key.
- Each analytical reasoning question is designed to test the analytical skills.
- Usually, each logical reasoning question is a logical puzzle, based on given conditions.
- These questions have only one correct answer, which is asked to be selected.
- Analytical reasoning questions consist of groups of four or five questions.
- At begging, a short passage followed by a set of conditions is given.
- Sometimes, graphs and tables are given instead of passage.
- To understand this type of questions, we define some logical terms and their applications with examples.

Preposition:

A declarative statement which may be true or false but not both is called a preposition. For example, the statement x = y can be either true or false and there could not be any other possibility.

Symbols Used in Logic:

Capital letters are used to represent specific statements.

For Example:
A: A triangle has four angles.
B: $\sqrt{17}$ is an irrational number.
C: 20 + 18 = 36
Solution: B is true; A and C are false.

Lower case letters, such as p, q are used to refer the preposition that are not specific. The following table is a brief list of the symbols which can be used:

Symbol	Meaning	Expression	How to read
~	not	$\sim p$	not p; negation of p
^	and	$p \wedge q$	p and q
V	or	$p \vee q$	p or q
$\rightarrow$	If…then, implies	$p \rightarrow q$	If p then q p implies q
$\leftrightarrow$	If and only if is equivalent to	$p \leftrightarrow q$	p if and only if q p is equivalent to q

Explanation:

1. Negation: The negation of a statement has the opposite truth value of the statement. The symbol for negation is ~, thus, $\sim p$ is read: "not p", "the negation of p" or "it is false that p". The adjoining table called the truth table, gives the possible truth values of p and $\sim p$. Thus

p	$\sim p$
T	F
F	T

The negation of true statement is a false statement.
The negation of false statement is a true statement.

2. Conjunction: Conjunction of two statements p and q is denoted by $p \wedge q$ (p and q) and it is considered to be true only if both of its components are true.

3. Disjunction: Disjunction of p and q is p or q. It is symbolically written $p \vee q$. The disjunction $p \vee q$ is considered to be true when at least one of the components p and q is true, and false if both components are false.

4. Implication or Conditional: A compound statement of the form if p then q, also written p implies q, is called an implication or conditional. In the conditional statement below, p is called the antecedent or hypothesis, and q is called the consequent.

$$p \rightarrow q$$

Examples:

(i) If he works hard, then he will got through.
(ii) If he wastes time, then he will fail.
(iii) If $a = 3$, then $a^2 = 9$.
(iv) If $a = -3$, then $a^2 = 9$.

5. Biconditional: If $p \rightarrow q$ and $q \rightarrow p$, then the preposition p and q are said to be biconditional and shortly written as "p if and only if q". Symbolically, it is written as:

$(p \to q) \wedge (q \to p) = p \to q$

Examples:

(i) If an triangle is an isosceles triangle then, its two angles are congruent.

(ii) If $x = y$, then $ax = ay$, where a, x and y are real numbers and $a \neq 0$.

Note: $p \leftrightarrow q$ is true only when both p and q are true or both p and q are false.

Model Example:

At All-Pakistan Weightlifting Championship, seven college athletes...M, N, O, P, Q, R and S... are being weighted. In order to make categories, the coach has given the following information:

(i) Each athlete has not exactly the same weight as another athlete.

(ii) R is heavier than S, but lighter than O.

(iii) P is heavier than S.

(iv) Both M and N are heavier than O.

1. ***Which of the following could not be true?***

(A) M is the heaviest. (B) N is the heaviest.

(C) P is the heaviest.

(D) More than three athletes are heavier than R.

(E) More than three athletes are lighter than R.

2. ***Which of the following, if true, would be sufficient to determine the lightest athlete?***

(A) P is the heaviest. (B) P is lighter than R.

(C) R is heavier than Q. (D) Q is heavier than R.

(E) Five candidates are lighter than M.

3. ***If Q is heavier than M, how many different ranking by weight, of the athletes are possible?***

(A) 1 (B) 2

(C) 3 (D) 5 (E) 7

4. ***If O is heavier than P, which of the following cannot be true?***

(A) P's weight is equal to the average of R's weight and S's weight.

(B) Q's weight is equal to the average of R's weight and S's weight.

(C) P's weight is equal to the average of M's weight and N's weight.

(D) Q is the second lightest.

Solution: First of all, we decompose the given information, symbolically:

(i) $M \neq N \neq O \neq P \neq Q \neq R \neq S$ (ii) $R > S, R < O$

(iii) $P > S$ (iv) $M > O \wedge N > O$

1. **(E)** From above, we find the exact answer.

Take false option, "M is the heaviest"

From the given information, $M > O$ and $N > O$, also $R < O$. Thus option A must be true.

Now, take second option, "N is the heaviest"

From above conclusion, it may be possible that N is the heaviest.

Third option is, "P is the heaviest". We solve it symbolically:

$\because \quad R > S \wedge R < O \Rightarrow S < R < O$

also $P > S \Rightarrow P \wedge R > S$

But $M \wedge N > O \Rightarrow R < M \wedge N$

From above, we cannot deduct that option "P is the heaviest" is wrong.

In third option, more than three athletes are heavier than R. Since, from the given information, $R > S$ But $R < O$ also $M > O$ and $N > O \Rightarrow M, N > O$.

$\Rightarrow M, N, O > R$. Because the information about Q not given, therefore, Q may be greater than R. This

option may be true. Now we take the option E, according to this option, more than three athletes are lighter than R, Here we analyze it. Information (i), (ii) and (iv) can be written symbolically, as

$$\boxed{M, N > O} > R > S$$

Since, from above the three circled athletes are heavier than athlete R, and athlete R is heavier than only S. Suppose if the remaining two athletes P and Q are lighter than R. In this condition only three athletes are lighter than athlete R. Thus it is impossible that more than three athletes are lighter than R.
Thus the answer is "Choice E".

2. **(D)** The first option is "P is the heaviest". Suppose P is the heaviest, then $P > S$, also $R > S$

$\Rightarrow P > R$, But $R < O \Rightarrow P > O$ (given)

$\Rightarrow P > M, N$, from this evaluation we cannot determine the lightest.

Take a look at the second option, "P is lighter than R", Suppose P is lighter than R, the $R > P \wedge R > S$

$\Rightarrow R > P \wedge S$.

This is also unsufficient to find the lightest weight.
In option C, R is heavier than Q, if R is heavier than Q, then, symbolically

$$R > Q \wedge R > S. \because O > R \Rightarrow O > R, Q, S$$

Hence it is not possible to find the lightest weight. In option D, Q is heavier than R. If this is true, then
$Q > R \wedge R > S \Rightarrow Q > R > S$
But $R < O$, therefore, $Q > O > R > S$, also
$M, N > O \quad \Rightarrow Q > M, N > O > R > S$
$\Rightarrow Q > M, N > O > R, P > S$
Thus, we can find the lightest weight after accepting this option.
Hence, the correct choice is choice D.

3. **(C)** If Q is heavier than M, then
$Q > M \Rightarrow Q > O$
$\because O > R \Rightarrow Q > O > R$
$\because R > S \Rightarrow Q > O > R > S$
Thus, the three categories are possible, which are
(i) $Q > O$ (ii) $O > R$ (iii) $R > S$

4. If O is heavier than P, then according to the first option which says that, P's weight is equal to the average of R's weight and S's weight.
$\because P > S \wedge O > P \Rightarrow O > S$, *i.e.*, $O > P > S$ also $R < O$. But $R > S \Rightarrow O > R > S$

Multiple Choice Questions (MCQs)

Questions 1-3:
A chemist is preparing a nutriment using eight different vitamins and minerals…A, B, C, D, E, H, F (Ferric), and Z (Zinc). According to the recipes, the following requirements apply to the use of ingredients:

(i) If B is used, both C and Z must also be used.
(ii) E and H must always be used together.
(iii) If C is used, at least two of A, B and F must also be used.
(iv) C and H cannot be used together.
(v) E, F and Z cannot all be used in a same nutrient.
(vi) A, D and Z cannot all be used in the same nutriment.

Question 1:

1. ***Which of the following is a suitable combination of vitamins and minerals for a nutriment?***

(A) *A, B, C, F* (B) *D, E, H, Z*
(C) *A, D, E, Z* (D) *C, D, E, F* (E) *E, H, F, Z*

2. ***Which of the following cannot be included in a nutriment that contains E?***
(A) *B* (B) *D* (C) *H* (D) *F* (E) *Z*

3. ***By the addition of exactly one more mineral, which of the following could make an acceptable combination of vitamins and minerals?***
(A) *A, D, Z* (B) *B, H, E*
(C) *C, D, H* (D) *C, E, Z* (E) *E, H, F*

Questions 4-6: A railway track from Lahore to Islamabad consists of six main stations, *P*, *Q*, *R*, *X*, *Y* and *Z*. Trains run only according to the following condition:

(i) From *P* to *Q*
(ii) From *Q* to *P* and from *Q* to *R*
(iii) From *R* to *X*
(iv) From *X* to *Q* and from *X* to *Y*
(v) From *Z* to *P*, from Z to *Y* and from *Z* to *R*.
(vi) From *Y* to *X*.
(vii) It is possible to transfer a station for another train.

4. ***The complete and accurate listing of the stations from which it is possible to reach R with exactly one transfer, is:***
(A) *P* and *Q* (B) *P* and *X*
(C) *X* and *Y* (D) *X* and Z (E) *X*, *P* and Z

5. ***The greatest number of stations that can be visited without visiting any station more than once, is:***
(A) 4 (B) 5
(C) 6 (D) 3 (E) 2

6. ***The trip which requires greatest number of transfers, is:***
(A) *P* to *R* (B) *Q* to *Y*
(C) *Z* to *Q* (D) *Z* to *R* (E) *Z* to *Y*

7. ***A group of dog lovers declare that the principal virtue of the dog is its general friendliness towards all people. But, another group of cat lovers declare that the principal virtue of the cat is its peculiar friendliness towards its provider.***
Which of the following is true of the claims of both dogs and cats lovers?
(A) Animals have not a sense to understand human behaviour.
(B) Groups of animal lovers are friendly.
(C) Friendliness is a virtue.
(D) They apply the same standard.
(E) Uncommon virtue of friendliness.

8. ***Rizwan was born in 1956, and so in 1965 he was nine years old. If we per use this example, it is clear that the last two digits of a person's birth will be the same as the last two digits of the year of that person's ninth birthday, except that the position of the digits will be reversed.***
Identify, which is the best criticism of the assertions made above.
(A) The generalization is valid only for those, in which last digit of their birth years is greater than four.
(B) The generalization is applicable only for those birth years that do not end in two zeroes.
(C) This example is not best illustration of the fact.
(D) The generalization is valid only for those birth years in which the difference of the last two digits is one.
(E) The generalization is valid only for those birth years that ends with 6.

Questions 9-10: At IOWA University, Students of Economics must complete a total of twelve courses selected from three different parts of the syllabus…comparative economics, environmental economics, and regional economics…in order to graduate, the students must meet the following course distribution

requirements:

(i) At least six of the required twelve courses must be from the environmental economics.

(ii) At least five of the required twelve courses must be from comparative economics and regional economics, with at least one, but no more than three, selected from comparative economics.

9. ***The minimum number of regional economics courses required to fulfil the course distribution requirements is***

(A) 1 (B) 3
(C) 5 (D) 2 (E) 4

10. ***If the student has completed six environmental economics courses and one regional economics course, the possible groups of courses to fulfil the course distribution requirements must include at least:***

(A) One Environmental Economics Course
(B) Three Regional Economics Courses
(C) One Regional Economics Course
(D) Two Comparative Economics Courses
(E) Three Comparative Economics Courses

Questions 11-15: Six candidates……Ali, Amin, Omer, Hamza, Saleem and Osama are being interviewed for a job. The interview will take place over four consecutive days, starting on Thursday. Each candidate will have only one interview. The day on which the different candidates will interview must confirm to the following conditions:

(i) At least one interview will take place each day.
(ii) No more than two interviews will take place on any day.
(iii) No more than three interviews will take place on any two consecutive days.
(iv) Ali's interview must take place on Saturday.
(v) Amin's interview must take place on the same day with another interview.
(vi) Saleem's interview must take place on the day before Osama's interview.
(vii) Omer's interview must take place on a day after Hamza's interview.

11. ***If only one interview takes place on Thursday which candidate could have that interview?***

(A) Ali (B) Amin
(C) Omer (D) Saleem (E) Osama

12. ***If the director decides to take two interviews on Thursday and two on Sunday, how many candidates would be eligible to interview on Friday?***

(A) 1 (B) 2
(C) 3 (D) 4 (E) 5

13. ***If Hamza and Osama have their interviews on the same day which of the following must be true?***

(A) Hamza's interview will take place on Thursday.
(B) Saleem's interview will take place on Friday.
(C) Amin's interview will take place on Saturday.
(D) Osama's interview will take place on Saturday.
(E) Amin's interview will take place on Sunday.

Explanatory Answers

Q1. (B) Take first option, which is *A, B, C, B*. By the first condition, $B \rightarrow (C \wedge Z)$. But *D* has not given, so this combination is not suitable. Now take the second combination, which is *D, E, H*, Z. This option is a correct choice, since it satisfies all the given conditions.

The third option is rejected due to the sixth condition. According to this condition, *A*, *D* and *Z* cannot be used altogether in a nutriment. Since *H* is not present with *E*, thus we reject option *D* due to second condition. The fourth condition is rejected due to fifth condition. So the correct answer is choice *B*.

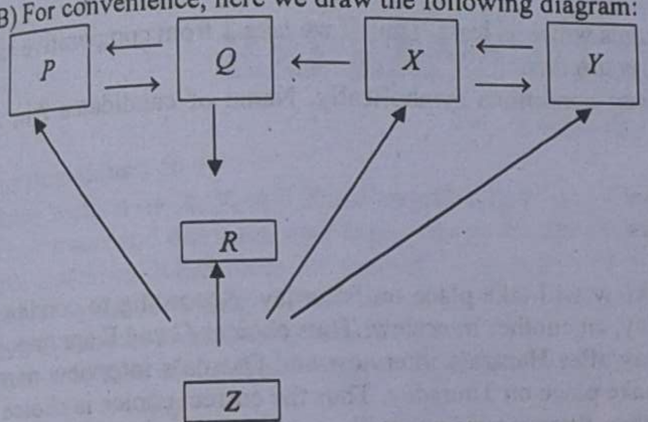
Q2. (A) If nutriment contains *E*, then according to second condition, $E \leftrightarrow H$. But according to fourth condition

$H \rightarrow \sim C$.

If we include B in the nutriment, then according to first condition $B \rightarrow (C \wedge Z)$ *i.e.*, C and Z must also be used. But if we use C then H must be absent in the nutriment. But E and H must always be used together. Thus we cannot include B in the presence of E. The correct choice is option A.

Q3. (E) Since A, D and Z cannot all be used in a nutriment, so we reject option A. The option B is, B, H, E, Since, C and Z must also be used with B (first condition) so we reject option B. Since C and H cannot be used together, so we reject option C. Since E and H must always be used together, so we reject option D. So the correct choice is option E. Which satisfies all the given conditions.

Q4. (B) For convenience, here we draw the following diagram:



It is clear from the diagram that from P to R, there is one transfer, but from Q to R, there is not any transfer, the track is direct. Thus, the option A is not possible. Now, from P to R these is only one transfer and same is the case from X to R. Thus option B is the correct choice.

Q5. (C) Here, the following list shows the track of trains that can be visited without visiting any station more than once:

$R \rightarrow X$
$Q \rightarrow R$
$Z \rightarrow R$
$Z \rightarrow P$
$Z \rightarrow Y$
$Q \rightarrow X$

The stations used in above tracks on
R, X, Q, Z, Y, P
Thus option (C) is the correct choice.

Q6. (B) From P$\rightarrow R$, there is only one transfer, *i.e.*, $P \rightarrow Q$. From $Q \rightarrow Y$, there are two transfers, *i.e.*, $Q \rightarrow R$ and $R \rightarrow X$. From Z to Q, there is only one transfer *i.e.*, $Z \rightarrow P$. From Z to R, there is not any transfer. At last, Z to Y there is not any transfer. Thus the correct choice is option B, *i.e.*, 2.

Q7. (C) This question asks you to identify the main point of both dog and cat lovers. According to first option, animals have not a sense to understand human behaviour. Since animals have a great sense to understand human behaviour, like, love, anger, etc., so we reject this option. It is not sufficient that only the pet lovers should be friendly, the animals (cats, dogs etc.) should also be friendly. Thus, option B is not a the best choice. The best choice is option C, since it focusses upon the characteristic of animals and their lovers, which they require.

Q8. (D) The given generalization is true only if the difference of the last two digits of birth year is 1. Suppose a man was born in 1959 and so in 1995, he was 36 years old. This is a same example as given, the only difference is the, difference of the last two digits of birth year which is not 1. Now, suppose that a man

was born in 1956 and so in 1965 he was 9 years old. This is so because the difference of the last two digits of the birth year in 1 *i.e.*, (6 – 5 = 1). Thus the correct answer is the option D.

Q9. (D) Since at least five courses must be from comparative and regional economics, with at least one, but no more than three selected from comparative economics. Thus if we select three courses from comparative economics, we must select two courses from regional economics group. Thus the correct choice is option D.

Q10(C)

C	*E*	*R*	
	6	1	
③	①	1	
3 +	7 +	2	= 12

From above, we took 1 regional economics which is least. Thus if we take 3 from comparative and one from environmental economic, it will fulfil the requirement.

Q(11).D Here, first, we express the given conditions symbolically. Name of candidates Ali, Amin, Omer, Hamza, Saleem and Osama.

Days: Thu, Fri, Sat, Sun
Each days condition: 1 or 2 interviews
2 consecutive days: 2 or 3 interviews
Ali's interview = Saturday

According to condition (iv), Ali's interview will take place on Saturday. According to condition (v), Amin's interview must take place on the same day, an another interview. Thus choices C and E are impossible. Since Omer's interview must take place on a day after Hamza's interview and Osama's interview must take place on a day after Saleem's interview, cannot take place on Thursday. Thus the correct choice is choice D.

Q(12). According to third condition, no more than three interviews will on any two consecutive days. Thus only one interview can take place on Friday. Therefore according to fifth condition, it cannot be Amin. Since Ali's interview is on Saturday. Thus, it cannot be Ali. Any of the other four candidates could be interviewed on Friday as indicated in the following points:

(i)	Thu Hamza/Saleem	Fri Omer	Sat Ali	Sun Amin/Osama
(ii)	Thu Amin/Saleem	Fri Hamza	Sat Ali	Sun Omer/Osama
(iii)	Thu Amin/Hamza	Fri Saleem	Sat Ali	Sun Omer/Osama
(iv)	Thu Hamza/Saleem	Fri Osama	Sat Ali	Sun Amin/Omer

Thus the correct choice is D.

Q13. (E) The possible schedule to fulfil this condition is:

Thu	Fri	Sat	Sun
Saleem	Hamza/Osama	Ali	Amin/Omer

Thus the correct choice is choice (E).

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GAT GENERAL
PRACTICE TESTS
with
EXPLANATORY ANSWERS

TEST NO. 1

For questions 1 to 4

Three women — *X*, *Y*, and *Z* are traveling in a van with five children — *A*, *B*, *C*, *D* and *E*. The van has a driver's seat and one passenger seat in the front, and two benches behind the front seats, one bench behind the first. Each bench has room for exactly three people. Everyone must sit in a seat or on a bench and seating is subject to the following restrictions: A women must sit on each bench. Either *X* or *Y* must sit in the driver's seat. *C* must sit immediately beside *E*.

Q1. Which of the following can sit in the front passenger seat?

(A) *C* (B) *D*
(C) *X* (D) *Y*
(E) *Z*

Q2. Which of the following groups of three can sit together on a bench?

(A) *A*, *C* and *E* (B) *A*, *C* and *Z*
(C) *A*, *Y* and *Z* (D) *B*, *D* and *Y*
(E) *D*, *E* and *X*

Q3. If *A* sits immediately beside Z, which of the following CANNOT be true?

(A) *C* sits immediately beside *Y*. (B) *D* sits immediately beside *Z*.
(C) *B* sits in the front passenger seat. (D) *A* sits on the same bench as *B*.
(E) *B* sits on the same bench as *X*.

Q4. If *Y* sits on a bench that is behind where *C* is sitting, which of the following must be true?

(A) *B* sits in a seat or on a bench that is in front of where *E* is sitting.
(B) *D* sits in a seat or on a bench that is in front of where A is sitting.
(C) *A* sits on the same bench as *B*.
(D) *D* sits on the same bench as *Y*.
(E) *E* sits on the same bench as *Z*.

For questions 5 to 7

Four computer operators (Ali, Babar, Cheema and Dar) each have to perform duties at the NADRA on four different days, Thursday through Sunday. The following is their duty schedule: Cheema has his duty day before Ali. Dar has his duty day later than Babar.

Q5. Which of the following is a possible order of duty days for the four operators?

(A) Cheema, Dar, Ali and Babar (B) Dar, Cheema, Ali and Babar
(C) Babar, Cheema, Dar and Ali (D) Ali, Cheema, Dar and Babar
(E) Ali, Babar, Dar and Cheema

Q6. If Cheema has his duty day on Saturday, who must have his duty day on Thursday?

(A) Either Ali or Dar (B) Dar
(C) Ali (D) Either Babar or Dar
(E) Babar

Q7. Each of the following possible EXCEPT:

(A) Cheema has his duty on Thursday.
(B) Babar has his duty on Thursday.
(C) Dar has his duty on Saturday.
(D) Babar has his duty on Sunday.
(E) Ali has his duty on Sunday.

Two statements, labeled *X* and *Y*, follow each of the following questions. The statements contain certain information. In the questions you do not actually have to compute an answer, rather you have to decide whether the information given in the statements *X* and *Y* is sufficient to find a correct answer by using basic mathematics and everyday facts.

Q8. How much time will computer need to solve 150 problems?

***X*. The computer needs 50 seconds to solve one problem.**
***Y*. Computer never takes more than 60 seconds to solve a problem.**

(A) Statement *X*. Alone is sufficient but *Y*. Alone is not sufficient to answer this question.
(B) Statement *Y*. Alone is sufficient but *X*. Alone is not sufficient to answer this question.
(C) Statements *X* and *Y*. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements *X* and *Y*. COMBINED are NOT sufficient to answer the question and additional information is needed to find the correct answer.

Q9. A horse ran 80 miles without stopping. What was its average speed in miles per hour?

***X*. The journey started at 6 PM and ended at 2 AM the following day.**
***Y*. The horse ran 20 miles per hour for the first 40 miles.**

(A) Statement *X*. ALONE is sufficient but *Y*. ALONE is not sufficient to answer this question.
(B) Statement *Y*. ALONE is sufficient but *X*. ALONE is not sufficient to answer this question.
(C) Statements *X* and *Y*. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements *X* and *Y*. COMBINED are NOT sufficient to answer the question and additional information is needed to find the correct answer.

Q10. In a B.Sc. class at G.C. University, 40 boys and 15 girls registered for Calculus and Analytical geometry. How many boys passed the course?

***X*. 7 students could not pass.**
***Y*. There were 3 girls who obtained A grade.**

(A) Statement *X*. ALONE is sufficient but *Y*. ALONE is not sufficient to answer this question.
(B) Statement *Y*. ALONE is sufficient but *X*. ALONE is not sufficient to answer this question.
(C) Statements *X* and *Y*. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements *X* and *Y*. COMBINED are NOT sufficient to answer the question and additional information is needed to find the correct answer.

Q11. A runner has just completed 46 miles running. How long did it take him to finish the journey?

***X*. His record speed is 13.2 miles per hour.**
***Y*. His average speed through the journey was 9.2 miles per hour.**

(A) Statement *X*. ALONE is sufficient but *Y*. ALONE is not sufficient to answer this question.
(B) Statement *Y*. ALONE is sufficient but *X*. ALONE is not sufficient to answer this question.
(C) Statements *X* and *Y*. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements *X* and *Y*. COMBINED are NOT sufficient to answer the question and

additional information is needed to find the correct answer.

Q12. **Captain of national hockey team should be the most popular member of the team. Who is the captain of Pakistan's national hockey team?**
X. **Saqlain is the best player on the team.**
Y. **Junaid is the senior-most member.**

(A) Statement *X.* ALONE is sufficient but *Y.* ALONE is not sufficient to answer this question.
(B) Statement *Y.* ALONE is sufficient but *X.* ALONE is not sufficient to answer this question.
(C) Statements *X* and *Y.* TOGETHER are sufficient to answer the question, but NEITHER of them is sufficient ALONE.
(D) Statements *X* and *Y.* COMBINED are NOT sufficient to answer the question and additional information is needed to find the correct answer.

Q13. **The principal of a college is forming a committee. There are to be five members: three teachers, chosen from Mr. *A*, Mr. *B*, Mr. *C*, Mr. *D* and Mr. E; and two students, chosen from *L, M, N,* and *O*. The composition of the committee must conform the following conditions: Mr. A will serve only if *O* is also on the committee. Mr. *C* will not serve unless Mr. *B* and *L* also serve. Neither Mr. *D* nor Mr. *E* will serve without the other. If *M* serves, either *N* nor *O* can serve. Which of the following is an acceptable committee?**

(A) *A, C, D, E, L* (B) *B, C, E, L, M*
(C) *B, D, E, L, O* (D) *C, D, E, L, M*
(E) *D, E, L, M, N*

Q14. **How many different committees could include Mr. A and *N*?**

(A) 1 (B) 2
(C) 3 (D) 4
(E) 5

Q15. **If *N* and *O* are both on the committee, who else must be on the committee?**

(A) *A* (B) *B*
(C) *C* (D) *D*
(E) *L*

Q16. **In how many different ways can the principal select an acceptable committee?**

(A) less than 3 (B) 3
(C) 7 (D) 5
(E) more than 7

Explanatory Answers

Solution 1-4

We summarize the given paragraph as:

i) Everyone must sit in a seat or on a bench but
   a) A women must sit on each bench.
   b) Either *X* or *Y* must sit in the driver's seat.
   c) C must sit immediately beside E.
ii) There are three women and 5 children in the van.
iii) There are two benches behind the front seats.
iv) Each bench has room for exactly three people.
v) The van has a driver's seat and one passenger seat in the front.

Q1. (B) There are five options given and asked which of the following sit on the front passenger seat. *C*

cannot sit in the front passenger's seat, because by given restrictions *C* must sit immediately beside *E*, and there are only one passenger seat in front, so *C* cannot sit in the front passenger seat. *X*, *Y* and *Z* also could not sit in front seat, because by the given restriction, either *X* or *Y* must sit in the driver's seat and a woman must sit on each bench. So, if *Y* sits on driver's seat, then *X* and Z must be on benches, similarly, if *X* sits on driver's seat then *Y* and *Z* must be on the benches. Hence, *X*, *Y* and *Z* cannot sit on front passenger's seat. The possible children who can sit on front passenger's seat are *A*, *B* and D. But *D* is the only name from these three (*A*, *B* and D) names in the given choices. Hence the correct answer is choice (B).

Q2. (D) Take first choice *A*, *C* and E. Here we see that *C* and *E* must sit together, it is also restricted that a woman must sit on a bench, but A is not a women. Hence, choice A is not a correct answer. Take second choice, *A*, *C* and Z. Because *C* must sit beside *E*, so this choice is not acceptable. Take third choice, *A*, *Y* and Z. In this choice *Y* and *Z* are women, and according to given restriction, a woman must sit on each bench. Now if *Y* and *Z* sit on a same bench, then *X* will be on driving seat. In this case a bench will be without a woman. Hence, choice *C* is also not acceptable combination. Now take choice *D*, *i.e.*, *B*, *D* and *Y*. In this choice, there is only one woman *Y* since *C* and *E* not occurring separately. So this choice is acceptable. In last choice, since *E* is sitting without *C*, so this choice is also not acceptable. Hence the best answer is choice D.

Q3. (E) In this question, we should choose a wrong combination in case of, if A sits immediately beside Z. Take choice *A*, *C* sits immediately beside *Y*. This is correct choice, because there is only one woman *Y* and one child C. The third child may be E. According to second choice, "D sets immediately beside Z". It may also be possible that *D* may sit beside Z. Here *Z* is only one woman on the bench, the third child may be *A*, according to this question. According to third choice, *B* sits in the front passenger seat. This is also possible. Because, women *X*, *Y*, *Z* and children *A*, *C* and *E* cannot sit on front passenger's seat. So *B* may sit in front passenger's seat. The fourth choice, *D* may also be true, because if A sits immediately beside Z, then there is one seat of a child is empty on that bench. Since, *C* sits beside *E*, so *C* and *E* may not be sit on this bench. Only *B* or *D* can sit on that empty seat. Hence, choice *D* may be possible. According to choice *E*, *B* sits on the same bench as *X*." Since, *X* is a woman and she cannot sit on that bench with other woman Z. So, *B* cannot sit as *X*. This choice may not be possible. Hence the correct answer is choice E.

Q4. (E) In this question, it is understood that *C* and *Y* are not on the same bench. Thus *E* is also not on the same bench where *Y* is. Take choice *A*, "B sits in a seat or on a bench that is in front of where *E* is sitting. From above discussion we concluded that woman *Y* is on the last bench since *C* and *E* must sit together, therefore *B*, A and *D* can sit only in front passenger's seat. Now, take second choice, according to this, *D* sits in a seat or on a bench that is in front of where A is sitting." This is also incorrect choice, because *C* and *E* sit between front and a last bench, so *D* can sit with A or behind C and E. According to third choice, "A sits on the same bench as B." A can sit both *B* and *D* not only B. Choice *C*, may also be true, but choice *D* may not be possible, because *C* and *E* must sit together. Thus if *E* sits as *Z* then the third may be *X*.

Solution 5-7

Here, we decompose the given paragraph:

i) There are four computer operators, Ali, Babar, Cheema and Dar.
ii) Each have to perform their duties on four different days.
iii) Days of duty are: Thursday, Friday, Saturday and Sunday.
iv) Cheema has his duty day before Ali.
v) Dar has his duty day later than Babar.

Q5. (C) In choice *A*, Cheema will perform his duty a day before Ali, this is according to the given restriction, but by the given restriction, Dar's duty should be a day later than Babar. Here, the Dar's duty is before Babar. Thus, this combination is not acceptable. In second choice, there is not a day's gap between Cheema and Ali, so this is also not acceptable. Choice *C*, is a right combination because, Cheema will perform his duty a day before Ali, and Dar will perform his duty a day later than Babar.

Hence, the correct answer is choice C.

Q6. (E) If Cheema has his duty on Saturday, then the possible schedule is:

Thursday	Friday	Saturday	Sunday
Babar	Dar	Cheema	Ali

Hence, the correct answer is choice E.

Q7. (D) If Cheema has his duty on Thursday, the possible schedule is:

Thursday	Friday	Saturday	Sunday
Cheema	Babar	Ali	Dar

which is acceptable according to the given restrictions.

If Babar has his duty on Thursday, then the possible schedule is:

Thursday	Friday	Saturday	Sunday
Babar	Cheema	Dar	Ali

which is also acceptable according to the given restrictions.

If Dar has his duty on Saturday, then the above schedule is formed, which is acceptable. If Babar has his duty on Sunday, then it is not possible to follow the given restrictions. Because, Dar has his duty later than Babar. So, it is not possible to perform Dar duty if Babar perform his duty on Sunday. Because Sunday is the last day in the given schedule. Hence the correct answer is choice D.

Q8. (A) We set a proportion, to solve this problem

Time in seconds : Problems :: Time in second : Problems

$50 : 1 :: x : 150$

$\therefore \frac{50}{1} = \frac{x}{150}$

$\Rightarrow x = 150 \times 50 \quad \Rightarrow X = 7500$ seconds $= 2$ hours and 5 minutes

So, statement *X*, ALONE is sufficient to solve this problem. Hence, the correct answer is choice A.

Q9. (A) Since, the journey started at 6 PM and ended at 2 AM, so this journey is 8 hours. The average speed of the horse is $= \frac{80}{8} = 10$ miles per hour. So, statement *X*, ALONE is sufficient to solve this problem.

Hence, the correct answer is choice A.

Q10.(D) Statements *X* and *Y* are not sufficient to answer.

Q11.(B) Average speed of the runner $= 9.2$ m/hour

Distance traveled $= 46$ miles

$\because$ Average speed $= \frac{\text{Distance travelled}}{\text{time}}$

$9.2 = \frac{46}{t}$

$\Rightarrow t = \frac{46}{9.2} = 5$ hours

So, statement *Y*, ALONE is sufficient but *X* alone is not sufficient to answer this question. Hence, the correct answer is choice B.

Q12.(D) COMBINED statements *X* and *Y* are not sufficient to answer the question and some additional information is needed to find the correct answer.

Solution 13-16

Here, we decompose the given paragraph:

i) The principal of college is forming a committee of five members.
ii) Three teachers chosen from five teachers, Mr. *A*, Mr. *B*, Mr. *C*, Mr. *D* and Mr. E.
iii) Two students chosen from four students, *L*, *M*, *N* and *O*.
iv) Mr. *A* will serve only if *O* is also in the committee.
v) Mr. *C* will not serve unless Mr. *B* and *L* also serve.
vi) Neither Mr. *D* nor Mr. *E* will serve without the other.

vii) If *M* serves, neither *N* nor *O* can serve.

Q13.(C) Take choice *A i.e., A, C, D, E* and *L*, this choice will not be acceptable because according to the given condition, Mr. A will serve only if *O* is also in the committee. Take choice *B i.e., B, C, E, L,* M. This choice is also not acceptable, because according to the given restriction, neither Mr. *D* not Mr. *E* will serve without the other. Here, *E* is without D. Take choice *C i.e., B, D, E, L, O*. Since, this choice satisfies all the given restrictions. So this combination is acceptable for committee.

Q14.(A) There is only possible committee can be formed including Mr. A and N. The combination of this committee is *A, D, E,* N, *O*. Hence the correct answer is choice A.

Q15.(C) If *N* and *O* are both on the committee, then the other three members should all be teachers. Since, Mr. *C* will not serve unless Mr. *B* and *L* also serve. So Mr. *C* would not be on the committee. If he is on the committee, the third student *L* must include the other two students *N* and *O*. Thus the correct answer is choice C.

Q16.(C) The principal can select acceptable committee in the following ways:

1. *B, D, E, L, O*
2. *A, D, E, N, O*
3. *A, C, B, L, O*
4. *D, E, M, B, L*
5. *C, B, L, N, A*
6. *A, B, O, L, C*
7. *D, E, B, L, N*

Hence, the correct answer is choice C.

TEST NO. 2

For questions 1 to 4

A builder will build five houses in New Housing Scheme on a street that currently has no houses. The builder will select from seven different models of houses — *L, M, N, O, P, Q* and *R*. The Development Authority has placed the following restrictions on the builder: No model can be selected for more than one house. Either model *O* must be select or model *R* must be selected, but both cannot be selected. If model *Q* is selected, then model *N* cannot be selected. If model *M* is selected, then model *O* cannot be selected.

Q1. If model *M* is one of the models selected for the street, then which of the following models must also be selected?

(A) L (B) O
(C) P (D) Q
(E) R

Q2. If *L, M* and *P* are three of the models selected for the street, then which of the following must be the other two models selected?

(A) N and O (B) N and Q
(C) N and R (D) O and Q
(E) Q and R

Q3. Which of the following is an acceptable combination of models that can be selected for the street?

(A) *L, M, N, P, Q* (B) *L, M, P, Q, R*
(C) *L, N, P, Q, R* (D) *M, N, O, P, Q*
(E) *N, O, P, Q, R*

Q4. The model *R* is one model not selected for the street, then the other model NOT selected must be which of the following?

(A) *L* (B) *M*
(C) *N* (D) *O*
(E) *P*

For questions 5 to 7

An English speaking class in a college has a circular table with eleven seats around it. Five girls (Fatima, Maryam, Iram, Sana and Amna) and five boys (Bilal, Najam, Hamza, Osama, Javed) are seated around the table. None of the girls are seated in a seat adjacent to another girl. Fatima sits between Bilal and Najam, and next to each of them Javed does not sit next to Osama.

Q5. Which of the following is a possible seating order around the table?

(A) Empty seat, Bilal, Fatima, Najam, Maryam, Iram, Hamza, Osama, Amna, Javed and Sana

(B) Empty seat, Bilal, Fatima, Najam, Maryam, Javed, Amna, Sana, Osama, Iram, Hamza

(C) Empty seat, Bilal, Fatima, Najam, Sana, Javed, Amna, Osama, Iram, Hamza, Maryam

(D) Empty seat, Sana, Bilal, Fatima, Najam, Maryam, Javed, Osama, Amna, Hamza, Iram

(E) Empty seat, Iram, Bilal, Fatima, Najam, Maryam, Javed, Amna, Osama, Sana, Hamza

Q6. If Javed leaves his seat and occupies the empty seat, his new seating position would be between:

(A) Bilal and Fatima
(B) Iram and Najam
(C) Fatima and Najam
(D) Osama and Maryam
(E) Amna and Maryam

Q7. If Maryam, Hamza, Iram, Javed and Najam are seated in that order, which of the following is a correct completion of the seating order after Najam?

(A) Fatima, Bilal, Sana, Osama, Amna, empty seats

(B) Fatima, Bilal, Osama, Sana, empty seat, Amna

(C) Bilal, Amna, Fatima, Osama, Sana, empty seats

(D) Fatima, Bilal, Amna, Osama, empty seats, Sana

(E) Fatima, Bilal, Sana, empty seats, Amna, Osama

For questions 8 to 12

The accounts staff of the Mark corporation presently consists of three book-keepers (X, *Y* and Z) and five Data Entry Operators (*M, N, O, P* and Q). Management is planning to open a new office in another city sending three Data Entry Operators and two book-keepers from the present staff. To do so they plan to separate certain individuals who do not function well together. The following guidelines were established to set up the new office:

(i) Book-keepers *X* and *Z* are constantly finding faults with one another therefore should not be sent together to the new office.
(ii) Z and *N* function well alone but not as a team. They should be separated.
(iii) M and *P* have not been on speaking terms for many months. They should not go together.
(iv) Since *M* and *O* have been competing for a promotion, they should not be in one team. Based on the above information, find the correct answers to the following questions:

Q8. If *Y* insists on staying back then how many combinations are possible?

(A) 3
(B) 2
(C) 1
(D) None

Q9. If *X* is to be moved as one of the book-keepers, which of the following CANNOT be a possible working unit?

(A) XYMNQ
(B) XYNOQ
(C) XYMPQ
(D) XYNPQ

Q10. If *Z* is sent to the new office then which member of the staff CANNOT be sent?

(A) N
(B) Y
(C) O
(D) P

Q11. If *M* is sent to the new office then which of the following is a possible team?

(A) XYMNP (B) YZMOQ
(C) YZMNQ (D) XYMNQ

Q12. If both *Z* and *O* are moved to the new office, how many combinations are possible?

(A) 1 (B) 4
(C) 3 (D) 2

Direction: For questions 13 to 16
Each of the following problems has a question and two statements which are labeled 1 and 2. Use the data given in 1 and 2 together with other information given in the statement, and find a correct answer by using basic mathematics and everyday facts.

Q13. How many bulbs does Munir have?

1. **He bought two boxes each containing 12 bulbs.**
2. **He lent three bulbs to Khalid.**

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Q14. If $M > N$ and $O > P$, then, $M + O > N + P$. Is $S > T$?

1. $S + A > T + B$
2. $A > B$

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. COMBINED are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Q15. In Lahore Zoo, there are 37 deer. How many small black deer are there?

1. **12 of deer are small.**
2. **There are 20 black deer in the Zoo.**

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Q16. Can there be more than 150 pictures in a 30-page book?

1. **There is at least two pictures in each page.**
2. **There are no more than 4 pictures in any page.**

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Explanatory Answers

Solution 1 to 4

From the given paragraph, we write the following main points:

1. A builder will build five houses on a street that currently has no house on it.
2. There are 7 different models of houses *L, M, N, O, P, Q* and R.
3. The builder will select five different models from *L, M, N, O, P, Q* and R.
4. No model can be selected for more than one house.
5. Either model *O* must be selected or model *R* must be selected, but both cannot be selected.
6. If model *Q* is selected, then model *N* must also be selected.
7. If *M* is selected, then model *O* cannot be selected.

Q1. (E) If model *M* is selected, then builder should ignore *O*. We see from above point 5 that, either *O* must be selected or model *R* must be selected, but both cannot be selected. So, if builder cannot select *O*, he would select *R*. Hence the correct answer is choice E.

Q2. (C) If models *L*, M, and *P* have already been selected, then model *O* cannot be selected because *O* will not be selected if *M* has already selected. Since, *O* will not be selected, therefore *R* will be surely selected. Hence, the fourth model is *R*. Now, fifth model will be selected from *N* and Q. Here, we suggest *N* as a fifth model, because if the builder choose *Q* as a model, then model *N* must also be chosen, and there will be only five models must be selected. Hence the correct answer is choice C.

Q3. (C) Take choice "A", *L, M, N, P, Q*. This choice is not acceptable, because, either model *O* must be selected or model *R* must be selected. In this choice, any of them (O or R) is not present. Take choice "B", *L*, M, *P, Q, R*. According to the given condition, if model *Q* is selected, then model *N* must also be selected. In this choice, *Q* is without N. Hence, this choice is also not acceptable. Take choice "C", *L*, N, *P, Q, R*. Since, this choice satisfies all the conditions.
Hence, the correct answer is choice C.

Q4. (B) If, the model *R* is one model not selected, then model *O* must be selected, because by the given condition, either model *O* must be selected or model *R* must be selected. Now in this case *O* must be selected, but *M* cannot be selected, because, according to the given restriction, if *M* is selected, then model *O* cannot be selected. Hence, the correct answer is choice B.

Solution 5 to 7

We simplify the given problem in the following points:

1. There are eleven seats around a circular table.
2. There are five girls (Fatima, Maryam, Iram, Sana and Amna) who will be seated.
   For convenience, we denote them by F, M, I, S and A.
3. There are five boys (Bilal, Najam, Hamza, Osama and Javed) who will be seated.
   For convenience, we denote them by *B,* N, H, *O* and J.
4. None of the girls are seated in a seat adjacent to another girl.
5. Fatima sits between Bilal and Najam, and next to each of them Javed does not sit next to Osama.

Q5. (E) Take choice, "A". The choice is not acceptable because in this choice, Maryam sits adjacent to another girl Iram. But by the given restriction none of the girls are seated in a seat adjacent to another girl. In choice "B", since Amna sits adjacent to Sana, so this choice is also not acceptable. Clearly, the choice "E" is the only choice that satisfies all the condition. Hence, the correct answer is choice E.

Q6. (E) The correct order of seating is
Empty, Iram, Bilal, Fatima, Najam, Maryam, Javed, Amna, Osama, Sana, Hamza.
If Javed leaves his seat empty then the above setting becomes Iram, Bilal, Fatima, Najam, Maryam, Empty, Amna, Osama, Sana, Hamza.

Clearly more setting is required between Maryam and Amna, because none of the girls are seated in a seat adjacent to another girl. Hence the correct answer is choice E.

Q7. (A) If Maryam, Hamza, Iram, Javed and Najam are seated in that order, the correct completion of the seating order is
Fatima, Bilal, Sana, Osama, Amna, empty seat.
Hence, the correct answer is choice A.

Solution 8 to 12

Brief points from the given paragraph are given below:

1. Accounts staff of Mark Corporation consists of three book-keepers (X, *Y* and Z) and five data entry operators (*M, N, O, P* and Q).
2. Management sending three Data entry operators and two book-keepers from the present staff to new office located to another city.
3. Book-keepers *X* and *Z* should not be sent together to the new office.
4. Z and *N* should be separated.
5. M and *P* should not go together.
6. M and *O* should not be in one team.

Q8. (D) Since, book-keepers *X* and *Z* are constantly finding faults with one another, therefore they should not be sent together to the new office. But the management has decided to sent two book-keepers, now, if *Y* insists on staying back, then there would not be another combination of two book-keepers except *X* and Z. Hence the correct answer is choice D.

Q9. (C) Since *M* and *P* have not been on speaking terms for many months, so they should not go together. Hence, choice "C" cannot be a possible working unit.

Q10.(A) If *Z* is sent to the new office, then *X* should not be sent and *Y* should be sent to the new office. Now, if *Z* is sent to new office, then *N* should not sent. Hence the correct answer is choice A.

Q11.(D) If *M* is sent to the office, then we analyze the given options as:
Choice "A", XYMNP, this choice is not acceptable because *M* and *P* cannot be sent together.
Choice "B", YZMOQ, this choice is also not acceptable, because *M* and *O* should not be in one team.
Choice "C", YZMNQ, because *Z* and *N* should be separated, therefore, this choice is also not acceptable.
Choice "D", XYMNQ, since this combination satisfies all the conditions, so this choice is acceptable. Hence, the correct answer is choice "D".

Q12.(A) If *Z* and *O* both are moved to the new office, then *M* should not be included in the team because *M* and *O* should not be in one team, also *N* should not be included in the team because *Z* and *N* should be separated. Therefore, only one combination YZOPQ, is possible, if *Z* and *O* both are moved to the new office. Hence, the correct answer is choice A.

Q13.(C) Take 1 statement, Munir bought two boxes each containing 12 bulbs, so
Munir initially has $12 \times 2 = 24$ bulbs
Now, take 2 statement, he lent three bulbs to Khalid, combining the two statements we find that Munir has 21 $(24 - 3 = 21)$ bulbs. So, statements 1 and 2 TOGETHER are sufficient to answer the question but neither of them alone is sufficient. Hence, the correct choice is choice C.

Q14.(C) If $M > N$ and $O > P$, then $M + O > N + P$
$S > T = ?$
Statement (1), $S + A > T + B$
Statement (2), $A > B$
We analyze the given problem, by supposing values of the variables involved in this problem
Let $S = 7$ and $T = 6$, then
and Let $A = 4$ and $B = 3$, then
clearly, $S > T$ and $A > B$, but
$S + A > T + B$

$7+4>6+3$

$11>9$

Hence, statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them alone is sufficient. Hence, the correct answer is choice C.

Q15.(D) Total deer in the Zoo = 37
Small deer = 12
Black deer = 20
Small black deer = ?

Since, a small deer may be black or not black, and a black deer may be small or not small, so we cannot find the exact answer from the given two statements, 1 and 2. Hence, the correct answer is choice D.

Q16.(B) Since, there are no more than 4 pictures in any page, so there are maximum $30 \times 4 = 120$ pictures in the 30 pages book. Thus, statement (2) ALONE is sufficient but (1) ALONE is not sufficient to answer the question.

TEST NO. 3

For questions 1 to 2

A city map representing roads *M, N, O, P, Q* and *R*. Link roads cannot have the same colour in the map. The roads link to each other are as under:

Each *M, N, P* and *Q* has link to *O*.

P has a link to Q.

Each of *M* and *N* has a link to R.

Q1. Which of the following roads can be the same colour as *O* on the map?

(A) N (B) P
(C) Q (D) R

Q2. Which of the following is a pair of roads that can be the same colour?

(A) M and N (B) N and O
(C) O and P (D) P and Q

Questions 3 to 8 depend on the following passage

A Government College sports president wishes to select four members of a sports-wing committee as special representatives to meet the requirements of college's sports activities.

The committee consists of eight members four of which (K, *L, M* and N) are sports teachers whereas the other four (*P, Q, R* and S) are students.

The president can select any four of the eight committee members as long as the following rules are observed:

The four representatives must consist of exactly two sports teachers and two students.

Either *K* or *L* must be one of the representatives but *K* and *L* both cannot be the representatives. If *P* is a representative then *M* must also be a representative.

If *R* is a representative then *L* cannot be a representative.

Q3. If *R* is a representative but *M* is not a representative then the whole group can be determined if it were also true that:

(A) K is a representative (B) N is a representative
(C) P is a representative (D) S is not a representative

Q4. If *P* is a representative then which of the following CANNOT be a representative?

(A) M (B) N
(C) Q (D) R

Q5. If *L* is a representative then which of the following can be the other three representatives?

(A) K, *Q* and S (B) M, *N* and P
(C) M, *P* and Q (D) N, *P* and S

Q6. If neither *Q* nor S is a representative then which of the following is a pair of teachers

representatives?

(A) K and L (B) K and M
(C) K and N (D) L and M

Q7. If L, N and Q are representatives then which of the following must also be a representative?

(A) M (B) P
(C) R (D) S

Q8. If K and N are representatives then which of the following is not a representative?

(A) Q (B) R
(C) P (D) None

Two statements, labeled (1) and (2), follow each of the following given questions. The statements contain certain information. In the question you do not actually have to compute an answer, rather than you have to decide whether the information given in the statements (1) and (2) is sufficient to find a correct answer by using basic mathematics and everyday fact?

Q9. What day of the week is today?

1. **Today is December 25.**
2. **Amjad left Pakistan on Monday.**

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Q10. Can any of the four rivers be more than 200 meters wide?

1. **The narrowest of the four rivers is 140 meters wide.**
2. **Average width of the four rivers is 200 meters.**

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Q11. If it is raining then there must be clouds. Are there clouds?

1. **Today is Saturday. It is not raining.**
2. **It rained Friday.**

(A) Statement 1. ALONE is sufficient but 2. ALONE is not sufficient to answer this question.
(B) Statement 2. ALONE is sufficient but 1. ALONE is not sufficient to answer this question.
(C) Statements 1 and 2. TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.
(D) Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

For questions 12 to 13

There are seven cages next to each other in a zoo. The following is known about the cages. Each cage has only one animal, which is either a lion or a monkey. There is a lion in each of the first and last cages. The cage in the middle has a monkey. No two adjacent cages have monkeys in them. The monkey's cage in the middle has two lion cages on either side. Each of the other monkey cages are between and next to two lion cages.

Q12. How many cages have lions in them?

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

Q13. **The monkey cage in the middle must have:**
(A) No other monkey cage to its left.
(B) No lion cage on its right.
(C) A lion cage to its left and to its right.
(D) Other monkey cages next to it.
(E) No lion cage to its left.

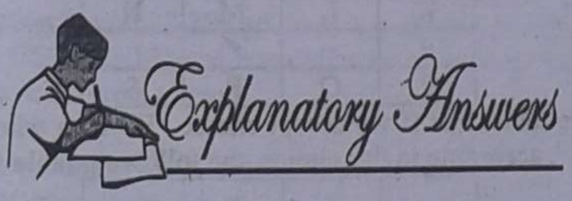
For questions 14 to 16

Seven children — *M, N, O, P, Q, X* and *Y* are eligible to enter a drawing contest. From these seven, two teams must be formed, a blue team and a yellow team, each team consisting of exactly three of the children. No child can be selected for more than one team. Team selection is subject to the following restrictions: If *P* is on the blue team, *O* must be selected for the yellow team. If *M* is on the blue team, *Q*, if selected must be on the yellow team. *Q* cannot be on the same team as *X*. *N* cannot be on the same team as *O*.

Q14. **Which of the following can be the three members of the blue team?**
(A) M, *N* and O
(B) M, *Q* and Y
(C) N, *O* and Y
(D) O, *P* and Q
(E) *P*, *Q* and Y

Q15. **If *P* and *M* are both on the blue team, the yellow team can consist of which of the following?**
(A) N, *O* and Q
(B) N, *X* and Y
(C) O, *Q* and X
(D) O, *Q* and Y
(E) Q, *X* and Y

Q16. **If *P* is on the blue team, which of the following if selected, must also be on the blue team?**
(A) M
(B) N
(C) Q
(D) X
(E) Y



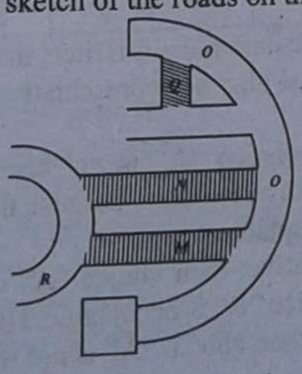
Solution 1 to 2

Here, first of all we decompose the given problem in the shape of important points.

1. A city map representing roads, *M, N, O, P, Q* and R.
2. Link roads cannot have the same colour on the map.
3. Each *M, N, P* and *Q* has link to *O*.
4. P has a link to Q.
5. Each of *M* and *N* has a link to R.

Q1. (D) Since, link roads cannot have the same colour on the map. Now, according to the given condition, each, *M, N, P* and *Q* has link to *O*. As *R* has no link to *O*, so its colour should be same as *O*. Hence, the correct answer is choice D.

Q2. (A) We draw the following estimated sketch of the roads on the map:



From above diagram, clearly roads M and N have no link each other. Hence, M and N should have the same colour. So, the correct answer is choice A.

Solution 3 to 8:

The important conclusions from the given problem are given below:

1. Sports committee consists of eight members.
2. There are four (K, L, M and N) sports teachers and four (P, Q, R and S) students in the committee.
3. President can select any four of the eight committee members.
4. The four representatives must consist of exactly two sports teachers and two students.
5. Either K or L must be one of the representatives but K and L both cannot be representatives.
6. If P is representative, then M must also be a representative.
7. If R is a representative then L cannot be a representative.

Q3. (D) Take choice "A", which says, K is a representative. We analyze the given statement, according to this statement, if R is representative, but M is not representative. If K is representative, then R combine K. Since M is not representative, so according to above point 6, P will also not representative. This situation is given in the following table "✓" indicates the representation and "×" represents "not representation".

✓	×	×	
K	L	M	N
×		✓	
P	Q	R	S

From above table, we find two groups, *i.e.*, KNRQ, KNRS. Thus we cannot find a single group. So, choice "A" is not correct choice. Now, if we accept choice "B", then the possible outcomes are given in the following table.

	×	×	✓
K	L	M	N
×		✓	
P	Q	R	S

It is clear from above table, that if we accept choice "B" then whole group cannot be determined. Now, take choice, "C", according to this choice, the following table formed.

	×	×	
K	L	M	N
✓		✓	
P	Q	R	S

It cannot be acceptable, because if P is accepted then M will also be accepted. But in the given statement M is not representative.

Lastly, we prepare the table according to the choice "D"

	×	×	
K	L	M	N
×		✓	×
P	Q	R	S

Thus a whole group KNQR can be determined. Hence, the correct answer is choice D.

Q4. (B) If P is representative then M must also be representative. Thus, choice "A" is not acceptable. The correct choice is choice "B".

Q5. (C) If "L" is a representative, then choice "A" is not acceptable, because K and L both cannot be representative. Choice B is also not acceptable, because there will three teachers (L, M, N) be joined in one group. The choice C is acceptable.

Q6. (B) If neither Q nor S is a representative, then choice "A" cannot be accepted, because K and L both cannot be representative. The choice "B" is acceptable. Hence the correct answer is choice B.

Q7. (D) If K, N and Q are representative, then choice "A" is not true choice, because if M join with K, N and

Q, then the teacher representatives become three, but the four representative must consist of two teachers. Now, take choice, *B*, if we accept this choice then the group of representative is K, N, *P*, *Q*. But, according to the given condition, if *P* is representative then *M* must also be a representative. Here, *P* is without M, so this choice is also rejected. Now, if we accept choice "C" then the group of representative is K, N, *Q*, *R*, which is also not acceptable. If we accept choice "D", then the group of representative becomes K, N, *Q*, S, which is a acceptable representative group. Hence, the correct answer is choice D.

Q8. (C) If *K* and *N* are representative, then, clearly, choice "A", which is "Q" is not acceptable. The second choice *R* is also not acceptable, because if *R* is a representative, then *L* cannot be a representative. Here *R* is with *K* not with L. So *R* may be form a representative group. Hence this choice is also not acceptable. The choice "C" is acceptable, because if *P* is representative then *M* must also be a representative. Then the group becomes KNMP. This group is not a representative because in this group there are three teachers (K, *N* and M) which is not according to the given condition. Hence, the correct answer is choice C.

Q9. (D) Since, there is not any link between two statements and statements (1) and (2) COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer. The correct answer is choice D.

Q10.(C) Since, according to statement (1), the narrowest of the four rivers is 140 meters and according to the statement (2), average width of the four rivers is 200 meters. We are asked, can any of four rivers be more than 200 meters. Let we suppose the width of the rivers; $R_1 = 200$, $R_2 = 200$, $R_3 = 200$, $R_4 = 140$ meter.

$$\text{Average} = \frac{200 + 200 + 200 + 140}{4} = 185$$

But according to second statement, the average of four rivers is 200. It is only possible if any one or more rivers have their width more than 200. Hence, statements, (1) and (2) TOGETHER are sufficient to answer the question but NEITHER of them is sufficient ALONE.

Q11.(D) Since, Statements 1 and 2. COMBINED are not sufficient to answer the question and additional information is needed to find the correct answer.

Solution 12–13

We write the important points from the given problem briefly:

1. There are seven cages next to each other in the zoo.
2. Each cage has only one animal.
3. The animal is either a lion or a monkey.
4. There is a lion in the first and last cage.
5. No two adjacent cages have monkeys in them.
6. The monkey's cage in the middle has two lion cages on either side.
7. Each of the other monkey cages are between and next to two lion cages.

From above points we sketch the following diagram.

Lion	Monkey	Lion	Monkey	Lion	Monkey	Lion

1st cage Last cage

Q12.(C) From above diagram, clearly there are four lion cages.

Q13.(C) From above fig., we find two cages of lion to left and right of Monkey's cage.

Solution 14 to 16

Important points deduction from the given problem are given below:

1. Seven children — *M*, *N*, *O*, *P*, *Q*, *X* and *Y* are eligible to enter a drawing context.
2. From these seven children, two teams must be formed
   A blue team, a yellow team and each team consisting of exactly three of the children.
3. No child can be selected for more than one team.
4. If *P* is on the blue team, *O* must be selected for the yellow team.
5. If *M* is on the blue team, *Q*, if selected must be on the yellow team.

6. Q cannot be on the same team as *X*.
7. N cannot be on the same team as *O*.

Q14.(E) Take choice "A" that is M, *N* and *O*. This choice is not acceptable because *N* cannot be on the same team as *O*. Take choice "B", that is, *M*, *Q* and *Y*. This choice is also not acceptable, because *M* and *Q* could not be in the same team. Take choice "*C*", that is *N*, *O* and *Y*. Since *N* and *O* cannot be in the same team, so choice "C" also not acceptable. Take choice "D", that is, *O*, *P* and *Y*. Since *P* and *O* cannot be on the same team, so choice, *D*, also not acceptable. The correct choice is *E*, since it meets all the requirements given in the problem.

Q15.(D) Here, we draw the following table, according to the given condition.

Blue team	Yellow team
P	*O* ✓
M	Q
X	Y
N	

If P, M, *X* and *N* are in blue team, then *O* and *Q* must be in yellow team, *Y* can be either on blue and yellow team, so the yellow team may be *O*, *Q* and *Y*. Hence, the correct answer is choice D.

Q16.(B) By the given restrictions, if *P* is on the blue team, *O* must be selected for the yellow team. Similarly, if *M* is on the blue team, *Q* must be on the yellow team. The most important point to solve this problem is that *Q* cannot be on the same team as *X* and *N* cannot be on the same team as *O*. Now, if *P* is on blue team *O* must be on yellow team, so *N* cannot be on the yellow team. Hence, the correct answer is choice B.

TEST NO. 4

For questions 1 to 4

A carrier must deliver mail by making a stop at each of six buildings: S, T, U, V, W and *X*. Mail to be delivered are of two types, ordinary mail and priority mail. The delivery of both types of mail is subject to the following conditions: Regardless of the type of mail to be delivered, mail to W and mail to *X* must be delivered, mail to W and mail to *X* must be delivered before mail to U is delivered. Regardless of the type of mail to be delivered, mail to T and mail to S must be delivered before mail to *X* is delivered. Mail to buildings receiving some priority mail must be delivered, as far as the above conditions permit, before mail to buildings receiving only ordinary mail.

Q1. If S is the only building receiving priority mail, which of the following lists the buildings in an order, from first through sixth, in which they can receive their mail?

(A) *T, S, W, X, V, U*
(B) *T, S, X, W, U, V*
(C) *S, T, W, U, X, V*
(D) *S, W, T, X, V, U*
(E) *V, S, T, W, X, U*

Q2. If T, U and *X* are each receiving priority mail, which of the following lists the buildings in an order, from first through sixth, in which they can receive mail?

(A) *S, T, W, X, V, U*
(B) *T, S, V, W, X, U*
(C) *T, S, X, W, U, V*
(D) *U, T, X, W, S, V*
(E) *X, T, U, W, S, V*

Q3. If the sequence of buildings to which mail is delivered is V, W, T, S, X, U and if *X* is receiving priority mail, which of the following is a complete and accurate list of buildings that must also be receiving priority mail?

(A) *V, T*
(B) *V, W*
(C) *W, T*
(D) *W, U*
(E) *V, W, T, S*

Q4. If only one building is to receive priority mail, and as a result, V can be no earlier than fourth in the order of buildings, which of the following must be the building receiving priority mail that day?

(A) S
(B) T
(C) U
(D) W
(E) X

Questions 5–9

During 2006, from January through June, the Chairman of Physics Department will be on Sabbath. The Dean of College has asked each of the college six professors in the department — Akhter, Bilal, Chohan, Fraz, Hamid and Noman — to serve as acting chairman during one of these months. The physicists can decide the order in which they will serve, subject only to the following criteria established by the dean.

i. Chohan will serve as chairman in February.
ii. Akhter will serve as chairman before Hamid does.
iii. Bilal and Fraz will serve as chairman in consecutive months.

Q5. Which of the following professors could serve as chairman in January?

(A) Bilal
(B) Chohan
(C) Fraz
(D) Hamid
(E) Noman

Q6. In how many ways can the schedule be made up if Noman has to serve as Chairman in May?

(A) 1
(B) 3
(C) 6
(D) 4
(E) 2

Q7. If Noman serves in April, all of the following could be true except:

(A) Akhter serves in January
(B) Hamid serves in March
(C) Bilal serves in May
(D) Bilal serves in June
(E) Hamid serves in June

Q8. If Bilal serves in May, what is the latest month in which Akhter could serve?

(A) March
(B) April
(C) January
(D) February
(E) June

Q9. Which of the following CANNOT be true?

(A) Akhter and Noman serve in consecutive months
(B) Noman and Hamid serve in consecutive months
(C) Hamid and Fraz serve in consecutive months
(D) Akhter and Chohan serve in consecutive months
(E) Bilal and Chohan serve in consecutive months

Questions 10–14

During practice matches, before a major tournament, in a football ground, one team can practice at a time. There are seven teams — the Argentine, the Brazil, the Senegal, the Dubai, the England, the France and the Germany. The football ground is open seven evenings a week from Monday to Sunday (Sunday being considered the last day of the week), and the allocation of the practice times is governed by the following rules:

(i) On any evening, only one team can play.
(ii) The Argentine must practice on Monday.
(iii) The Dubai practice exactly one day before the France practice.
(iv) The France practice exactly one day before the Germany practice.
(v) The Senegal and the Brazil must practice earlier in the week than the England.

Q10. The latest day in the week that the Brazil can practice is:

(A) Tuesday
(B) Wednesday
(C) Thursday
(D) Friday
(E) Saturday

Q11. If a person went to the football ground on three consecutive evenings, her or she could see which

of the following teams in the order listed?

(A) the France, the Germany, the Senegal
(B) the France, the Germany, the Dubai
(C) the Argentine, the Dubai, the Senegal
(D) the Brazil, the Senegal, the France
(E) the Dubai, the England, the France

Q12. On week, the Senegal practiced on Wednesday and the Dubai practiced the next day. That week, the Brazil must have practiced on:

(A) Monday
(B) Tuesday
(C) Friday
(D) Saturday
(E) Sunday

Q13. If the Germany practice on Thursday, the England and the Dubai must practice on which days, respectively?

(A) Sunday and Tuesday
(B) Saturday and Tuesday
(C) Friday and Wednesday
(D) Wednesday and Thursday
(E) Tuesday and Monday

Q14. If the France practice on Saturday, the England must practice on what day?

(A) Tuesday
(B) Wednesday
(C) Thursday
(D) Friday
(E) Sunday

Questions 15 to 17

At a meeting of the Ruling Party, the seven top party leaders, who are all cabinet ministers, are seated on a platform in order of rank the Prime Minister being in the center. The closer a person is to the Prime Minister, the higher is his/her rank. Moreover, a person sitting on the right of the Prime Minister outranks the one sitting equidistant on the left of the Prime Minister. The seven leaders are *L, M, N, O, P, Q* and R.

Q is four places left to the Minister of Agriculture, who is two places to the right of N.

M's neighbours are *L* and the Minister of Agriculture *R* is two places to the left of *O*.

The Minister of Education, Mining and Culture are seated together, in order, from left to right.

The remaining Ministers are these of Social Welfare and Defence.

Q15. The fifth ranking person in the party hierarchy is:

(A) R, the Minister of Mining
(B) Q, the Minister of Culture
(C) O, the Prime Minister
(D) P, the Minister of Defence

Q16. How many of the seven party leaders outrank the Minister of Education?

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

Q17. The lowest ranking Minister is:

(A) Minister of Education
(B) Minister of Social Welfare
(C) Minister of Mining
(D) Minister of Defense
(E) Minister of Culture

Explanatory Answers

Solution 1-4

Here, we illustrate the given problem into important points:

1. A courier must deliver mail by making a stop at each of the six buildings: S, T, U, V, W and *X*.
2. There are two types of mail: Ordinary mail and priority mail.
3. Mail to W and mail to *X* must be delivered before mail to U be delivered.
4. Mail to T and mail to S must be delivered before mail to *X* is delivered.

Q1. (D) If S is the only building receiving priority, mail. Then building S will be the first on priority. Since,

mail to W and mail to *X* must be delivered before mail to U is delivered. Then the first four mails in the list are SWXU. Now, according to the point 4 mail T and mail S must be delivered before mail X, so the above list becomes after this condition SWTXVU, which is the correct list.

Q2. (C) Since mail to T and mail to S must be delivered before mail to X, but in this problem T has a priority, so the same elements of the list are T, S, *X* according to point (3) and given priority the list becomes, T, S, X, W, U, V. Hence the correct answer is choice C.

Q3. (B) Clearly V and W is the receiving priority mail. Hence, the correct answer is choice "B".

Q4. (E) If V can be no earlier than fourth in the order, then the receiving priority must be *X*. Because in the list T, S, X, W, U, and V, V replaces with *X*. Hence, the correct answer is choice E.

Solution 5–9

Let *A*, *B*, *C*, F, H and *N* represents professors Akhter, Bilal, Chohan, Fraz, Hamid and Noman, respectively. Then, from the given problem, we find the following important points:

1. Chohan will serve as chairman in February.
2. Akhter will serve as chairman before Hamid does. That is A < H.
3. Bilal and Fraz will serve as chairman in consecutive months. That is

$$B << F \text{ and } F << B$$

Q5. (E) Since, Chohan will serve as chairman in February, so Bilal and Fraz could not serve because Bilal and Fraz will serve as chairman in consecutive months. Because, Akhter will serve as chairman before Hamid, now. Hamid could not serve as chairman in February. So Akhter will not serve in January. So, only person Noman is there, which does not violate any of the conditions. Hence, the correct answer is the choice E.

Q6. (E) If Chohan serve as chairman in February, and Noman serves in May, then the possible schedule is given by:

January	February	March	April	May	June
Akhter	Chohan	Bilal	Fraz	Noman	Hamid
Akhter	Chohan	Fraz	Bilal	Noman	Hamid

Hence the correct answer is choice E.

Q7. (E) If Noman serves in April, then the possible schedule is given as:

January	February	March	April	May	June
Akhter	Chohan	Hamid	Noman	Bilal	Fraz
Akhter	Chohan	Hamid	Noman	Fraz	Bilal

From above schedule, it is possible that Akhter can serve as chairman in January, so choice A is not correct choice. It is also clear from above table that Hamid can serve in March, so choice *B* is also not correct choice. Choice, *C* and *D* not correct choices, because Bilal can serve as chiarman both in May and June as shown in the above table. Hence, *C* and *D* are also not correct choices. Only, choice "E" is not possible. Hence the correct answer is choice E.

Q8. (A) If Bilal serve in May, then the possible schedule for Akhter is given as:

January	February	March	April	May	June
January	Chohan	Hamid	Fraz	Bilal	Fraz
Noman	Chohan	Akhter	Hamid	Bilal	Fraz

From above table it is clear that Akhter can serve in January and March. In which, March is the latest month. Hence, the correct choice is choice A.

Q9. (A) The only professors that can serve in January are Akhter and Noman, so one of them must serve in January, and neither in February. So, Akhter and Noman cannot serve as chairman in consecutive months. Hence, the choice A cannot be true. Hence, the correct answer is choice A.

Q10.(B) From the given rules, one of the schedules is given as under:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Argentine	Senegal	Brazil	Dubai	France	Germany	England

Hence, the correct answer is choice B.

Q11.(A) From the following schedule given in the table, we find that the correct answer is choice A.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Argentine	Brazil	Dubai	France	Germany	Senegal	England

Q12.(B) If Senegal practiced on Wednesday and the Dubai practiced the next day, the new schedule is given below:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Argentine	Brazil	Senegal	Dubai	France	Germany	England

So the Brazil will practice on Tuesday. Hence the correct answer is choice B.

Q13.(A) If the Germany practice on Tuesday, then the new schedule may be as:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Argentine	Dubai	France	Germany	Brazil	Senegal	England

From above table, we find that England and Dubai will practice on Sunday and Tuesday respectively. Hence, the correct answer is choice A.

Q14.(C) If the France practice on Saturday, then the new schedule is given by:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Argentine	Brazil	Senegal	England	Dubai	France	Germany

From above schedule, under the given rules, if France practice on Saturday, then England must practice on Thursday. Hence the correct answer is choice C.

Solution 15 to 17

From the given problem, we sorted out the following points:

1. The seven party leaders are, *L, M, N, O, P, Q* and R.
2. Prime Minister is in the center.
3. The closer a person to the Prime Minister; the higher is his/her rank.
4. A person sitting on the right of the Prime Minister outranks the one sitting equidistant on the left of the Prime Minister.
5. Q is four places to the left of the Minister of Agriculture, who is two places to the right of N.
6. M's neighbours are *L* and the Minister of Agriculture.
7. R is two places to the left of *O*.
8. The minister of Education, Mining and Culture are seated together, in order from left to right.
9. The remaining Ministers are those of Social Welfare and Defense.

From above points we draw a following sketch:

Culture	Mining	Education	P.M	Minister of Agriculture	Social Welfare	Defense
Q	R	N	O	P	M	L
4	5	6		1	2	3

Q15.(A) From above table, clearly, the fifth rank of the party person is R, who is the Minister of Mining. Hence, correct answer is choice A.

Q16 (E) Including P.M. there are six party leaders outrank the Minister of Education. It is clear from the table.

Q17.(A) From table, it is clear that Minister of Education has the lowest rank. Hence, the correct answer is choice A.

TEST NO. 5

According to Albert Einstein's famous theory of relativity, time travel is theoretically possible. If we assume that time travel were to be possible through some technological wonder, it would be advantageous to send someone back in time to prevent the assassination of Archduke Franz Ferdinand in 1914 and thus keep Word War I from ever occurring.

Q1. **The argument above makes which of the following assumptions?**

(A) The technology necessary for time travel is likely to be developed in the near future.
(B) If the time travel were to be developed in the future, evidence of time travelers would be apparent to those living today.
(C) It is not possible to alter a significant current in world history merely by changing a single event.
(D) If Franz Ferdinand had not been assassinated, some other catalytic event would have led to the start of World War I.
(E) The assassination of Franz Ferdinand was the crucial event that triggered the start of Word War I.

Q2. **Plant P thrives in environments of great sunlight and very little moisture. Desert D is an environment with constant, powerful sunlight, and next-to-no moisture. Although Plant P thrives in the areas surrounding Desert D, it does not exist naturally in the desert, nor does it survive long when introduced there. Which of the following would be most useful in explaining the apparent discrepancy above?**

(A) For one week in the fall, Desert D gets consistent rainfall.
(B) The environment around Desert D is ideally suited to the needs of Plant P.
(C) Due to the lack of sufficient moisture, Desert D can support almost no plant life.
(D) Plant P cannot survive in temperatures as high as those normally found in Desert D.
(E) Desert D's climate is far too harsh for the animals that normally feed on Plant P.

Questions 3-6:

A publisher chooses five articles to be published in the upcoming issue of an arts review. The only articles available for publication are theater articles L, M, N and O and dance articles W, X, Y and Z.

At least three of the fire published articles must be dance articles.
If O is chosen, then Y cannot be.
If L is chosen, then O must also be chosen.

Q3. **If Y is not chosen for the issue, which of the following must be chosen?**

(A) L (B) M (C) N
(D) O (E) W

Q4. **How many acceptable groupings of articles include O?**

(A) One (B) Two (C) Three
(D) Four (E) Five

Q5. **The choice of which article makes only one group of articles acceptable?**

(A) L (B) M (C) O
(D) X (E) Y

Q6. **If M is chosen for the issue, which of the following must be true?**

(A) O is not chosen (B) N is not chosen
(C) Exactly three dance articles are chosen (D) L is not chosen
(E) All four of the dance articles are chosen

Questions 7:

Light bulbs that emit lower-intensity light save energy by requiring less electricity. Therefore, if homeowners use only low-intensity light bulbs, their electric bills will decrease.

Q7. **Which of the following represents a necessary assumption for the above argument?**

(A) Low-intensity light bulbs are less expensive than more standard light bulbs.
(B) By lowering electricity use, homeowners can help decrease pollution levels in their communities.
(C) The low-intensity light bulbs are as effective in providing light as standard light bulbs.

(D) Homeowners are always concerned with lowering their utility bills.
(E) Low-intensity light bulbs have been shown to create less stress on eyes, and people using low-intensity light bulbs have fewer medical problems.

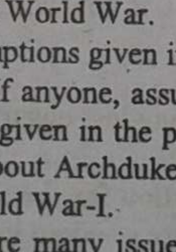
Questions 8-9:
All good athletes want to win, and all athletes who want to win eat a well-balanced diet, therefore, all athletes who do not eat a well-balanced diet are bad athletes.

Q8. Which of the following, if true, would refuse the assumptions of the argument above?
(A) Fatima wants to win, but she is not a good athlete.
(B) Rizwan, the accountant, eats a well-balanced diet, but he is not a good athlete.
(C) All the players on the Zeeshan baseball team eat a well-balanced diet.
(D) No athlete who does not eat a well-balanced diet wants to win.
(E) Sonia, the basketball star, does not eat a well-balanced diet, but she is a good athlete.

Q9. If the assumptions of the preceding argument are true, then which of the following statements must be true?
(A) No bad athlete wants to win.
(B) No athlete who does not eat a well-balanced diet is a good athlete.
(C) Every athlete who does not eat a well-balanced diet is a good athlete.
(D) All athletes who want to win are good athletes.
(E) Some good athletes do not eat a well-balanced diet.

Question 10:
Ishfaq Ahmed disparaging reviews of the book call his abilities as a critic into question since the book became an immediate best-seller.

Q10. Which of the following, if true, would most weaken the author's questioning of Ishfaq's critical ability?
(A) Immediate success of books is quickly forgotten.
(B) Book critics often disagree with each other.
(C) Sales of a book are not always indicative of its value.
(D) Critics often change their views about books.
(E) The significance of a book is not known for years.



Explanatory Answers

Q1. (E) According to choice A, all of the past events can be controlled if the technology necessary for time travel is likely to be developed in the near future. Actually, this assumption can be accepted if in the given argument is focused only the time travel technology. But in the given passage, there are four important things. These are:

1. Famous theory of relativity.
2. Time travel technology advancement.
3. Archduke Franz Ferdinand.
4. Horrors of First World War.

The first three assumptions given in the options (A–C) is relevant to the time travel technology and role of technology. If anyone, assumption from the given option (A–C) is accepted, it means that the whole argument given in the paragraph is focused on time travel advancement, but if it is true then the argument about Archduke Franz Ferdinand may be changed to another events that caused the occurring of World War-I.

Since, there were many issues those made the First World War occurring. Actually, in this passage, the writer raised the main cause of World War I, which is relevant to Archduke Franz Ferdinand.

Here, the conclusion is based on comparing the World War I and Archduke Franz Ferdinand. Thus, you may choose choice E.

Q2. (D) In the given paragraph, the evident is that the Plant P thrives in environments of great sunlight and very little moisture.

The author's conclusion is that Plant P thrives in the areas surrounding Desert D, it does not exist naturally in the desert, nor it survives long when introduced there.

Choice A indicates that one week in the fall, Desert D gets consistent rainfall. Since, Plant P thrives in environments of great sunlight and very little moisture. So one week rainfall is not a very little moisture, this week may destroy such type of plants, if we assume that this week is ideal for Plant P, then after this week the environment of Desert D will come back which is constant, powerful sunlight, so the plant may destroy after this week. Hence, this choice is not acceptable.

In the given paragraph, the writer has focused upon, Plant P and Desert D, so choice B which is about environment around Desert D may be rejected.

Similarly, choice C says that due to back of sufficient moisture, Desert D can support almost no plant life. This argument is rejected because many plants thrives in such environment called desert plants. Also, in this argument, the Plant P is not considered so this choice may also be rejected.

Since, the Desert D is an environment with constant, powerful sunlight, so according to the given conclusion, the plant does not exist in Desert D, also the weather of Desert D is harsh for animals, this fact is true but the writer did not discuss about animals, so this choice may also be rejected.

The only choice that must be true is choice D, which indicates that Plant P cannot survive in hot temperature as those normally found in Desert D. So, you must mark choice D.

Q3. (E) In the given paragraph, five articles can be chosen by the following restriction:

1. The theater articles are: L, M, N, and O
2. Dance articles are: W, X, Y and Z
3. At least three of the five published articles must be dance articles.
4. If O is chosen, then Y cannot be. Logically
$$O \rightarrow \sim Y$$
5. If L is chosen, then O must also be chosen. Logically,
$$L \leftrightarrow O$$

Now, if Y is not chosen for the issue, then O must be chosen, if O is chosen then L must also be chosen. Since, at least three of the five published articles must be dance articles. The dance articles are:

W, X, Y and Z

Now, from above discussion, O and L must be chosen altogether, and in the case Y is not chosen. Logically,

$$(O \wedge L) \rightarrow \sim Y$$

$\therefore$ From, theater articles O and L articles have been chosen. Now, we have to choose three articles from dance articles except Y. The remaining articles are

W, X and Z

Since, X and Z have not given in the given options, and only Z has been given in the choice E. So you must choose choice E.

Q4. (C) Since, if O is chosen, then Y cannot be chosen, so, the group of dance articles is only one *i.e.*,

W, X and Z

Because, we have to choose two articles from given four theater articles including O. The possible combinations are:

Theater articles	*Dance articles*	*Dance and theater articles*
O, L	W, X, Z	O, L, W, X, Z
O, M	W, X, Z	O, M, W, X, Z
O, N	W, X, Z	O, N, W, X, Z

Hence, best answer is choice C.

Q5. (A) According to the given condition, if L is chosen then O must also be chosen. Symbolically,

$$L \leftrightarrow O$$

But if O is chosen, then Y cannot be chosen. In this case, only three dance articles W, Y and Z are left. Since, we have to choose at least three dance articles, so all three remaining dance articles W, X and Z are chosen. In theater articles, we have to choose two articles to make five whole of it. Thus, if we choose theater article L, then there must only be one group of five articles according to the given conditions. That is

L, O, W, X, Z

Hence, the best answer is choice A.

Q6. (E) If M is chosen for the issue then L must not be chosen. Because, if L is chosen then O must also be chosen. In this case, the theater articles become three, which are M, L and O. But according to the given condition, at least three of the published articles must be dance articles, so theater articles must not be more than two. So in this case, L must not be chosen. Hence, best answer is choice E.

Q7. (C) The given passage begins with light bulbs and then breaks in the next-sentence. The main points of the passage are:

1. Light bulbs that emit lower-intensity light save energy.
2. Light bulbs that emit lower-intensity consume less electricity.
3. If homeowners use only low-intensity bulbs, their electric bill will decrease.

The cue word in this passage is "lower-intensity." The writer's contention isn't understood by argument given in choice A; this argument has lack of standard discrepancy. Because, we cannot predict that low-intensity bulbs are less standard. So, this argument is invalid because this is not relevant to the given passage.

Choice B indicates that lowering use of electricity, homeowners can decrease pollution levels in their communities. But, in fact, the question stem asks us to find the main reason which has been hidden in the given passage. This argument involves an invalid induction from premise. So, this choice may also be neglected. Actually, the writer wants to say that homeowners should be used low-intensity bulbs because these light bulbs have the same standard of light as other high-intensity standard bulbs. Thus, argument given in choice C is relevant to the given passage. Hence, best answer is choice C.

Q8. (E) The main points in the given passage is:

1. All good athletes want to win.
2. All athletes who want to win eat a well-balanced diet.
3. All athletes who do not eat a well-balanced diet are bad athletes.

In the given passage, the conclusion is: only bad athletes do not eat a well-balanced diet.

The argument, given in the option A is that, Fatima wants to win, but she is not a good athlete. This argument involves an invalid induction, because only a good athlete can win. Since, Fatima is not a good athlete, so, she did not want to win. similarly, an argument in choice B is not relevant to the given passage. Also the argument given in choice C is invalid because it is not relevant to the premise. In choice D, the argument is also invalid because every athlete wants to win either he eats a well-balanced diet or not. Choice E says, Sonia, the basketball star, does not eat a well-balanced diet, but she is a good athlete. We infer from the premise of an argument that it is not necessary to eat well-balanced diet, because only good athlete can win, but if an athlete having good balanced diet may not be win if he is not a good athlete. In this argument, since, Sonia is a basketball star and she does not eat a well-balanced diet, but she is a good athlete, we conclude that win or loss not depends on good diet but it depends on good athlete. Hence, best answer is choice E.

Q9. (B) In the given passage, the writer concentrates on well-balanced diet. He says that only those athletes can win who have well-balanced diet. If we accept this argument, then the best choice is choice B.

Q10. (C) Book-selling is not a way to recognize a best writer. Because many people purchase books of well-known writer even the recent book is not good. So best answer is choice C.

TEST NO. 6

Questions 1-4:
Six students of foreign languages, Amna, Bushra, Chaman, Dilber, Ehsan and Fatima, are seated together. They do not all speak the same language, but enough of them speak the same language that they can translate for each other.
Amna and Dilber speak only Urdu, Arabic and Hindi.
Bushra speaks only Urdu, Arabic and Chinese.
Chaman speaks only Pushto and Hindi
Ehsan speaks only Hindi.
Fatima speaks only Chinese.

Q1. **Which language is spoken by the most students?**
(A) Urdu *(B)* Arabic *(C)* Pushto
(D) Hindi *(E)* Chinese

Q2. **Who could act as a translator for a conversation between Bushra and Chaman?**
I. Amna **II. Dilber** **III. Ehsan** IV. Fatima
(A) I only *(B)* I and II *(C)* I, II and III
(D) II, III and IV *(E)* I, II and IV

Q3. **If Chaman and Fatima wish to talk to each other, what is the fewest number of translators, they could need?**
(A) 4 *(B)* 3 *(C)* 2
(D) 1 *(E)* 0

Q4. **Which of the following students could talk to each other without a translator?**
(A) Amna and Fatima *(B)* Bushra and Chaman *(C)* Bushra and Ehsan
(D) Ehsan and Fatima *(E)* Bushra and Fatima

Q5. **Although air pollution was previously thought to exist almost exclusively in our nation's cities, the recent increase in the number of persons suffering from illnesses attributed to excessive air pollution leaves us no choice but to conclude that other, non-urban areas are now affected.**
Which of the following if true, would most seriously weaken the conclusion of the argument above?
(A) The nation's cities have seen a marked decrease in their levels of air pollution.
(B) The nation has experienced a sharp decrease in the number of people moving out of its cities.
(C) Illnesses due to air pollution are among the least common causes of death to urban dwellers.
(D) Many illnesses previously thought unrelated to air pollution are now considered to be caused by it.
(E) As a result of the problems in urban areas, non-urban areas have passed strict pollution control measures.

Q6. **Manufacturers of household appliances in China are introducing an array of computerized technologies in the work of many of their factories in an effort to regain a lead eroded by international competition. On the basis of changes that have already taken place, experts predict a golden age for the consumer of better designed and better-built products.**
Which of the following, if true, would LEAST support the expert's claim that appliances produced by computerized technologies will be better built?
(A) Computerized inventory procedures ensure that parts are ordered in sufficient quantities and that production moves smoothly and consistently.
(B) Computer-directed machines carryout repetitive tasks with the result that errors due to human fatigue are eliminated.
(C) Computer-controlled ultrasound devices are better able to detect hidden flows and defects that require repair than are human inspectors.
(D) The flow of heat used to weld parts together is more consistent when directed by computer programs and results in a more accurate and uniform weld.

(E) Computer-driven screwdrivers ensure that screws used in appliances will be consistently tight.

Q7. Aagha Khan Blood Bank, Inc. is a private blood products company that buys blood only from qualified donors. To qualify a person must weigh at least 105 pounds, must not have taken malaria medication in the last three years, must neither have had hepatitis and must never had used intravenous drugs. Aagha Khan Blood Bank nurses know that traveling has an effect on the possibilities for blood donation: Everyone who travel to Malaysia is required to take malaria medicine; no one who enters Singapore can have ever used intravenous drugs, everyone traveling to Gorisimi gets hepatitis.

Which of the following situations would not automatically disqualify a person from selling blood to Aagha Khan Blood Bank?

(A) Being denied admission to Singapore.
(B) Traveling to Malaysia two years ago.
(C) Traveling to Gorisimi five years ago.
(D) Having once weighted 110 pounds and now weighing 95 pounds.
(E) Using intravenous drugs that were legal at the time.

Question 8:

Despite a steady stream of pessimistic forecasts, our economy continues to grow and prosper. Over the last 15 years the service sector of our economy has greatly expanded. Last year alone, 4,90,000 Pakistanis found employment in the service sector. In the face of evidence such as this, one cannot argue that our economy is wilting.

Q8. Which of the following, if true, would most seriously undermine the conclusion drawn above?

(A) Many Pakistanis who took jobs in the service sector last year were also offered jobs in other sectors of the economy.
(B) The importance of the service sector in determining the well-being of the overall. Pakistani economy has decreased somewhat in the past ten years.
(C) Forty years ago the Pakistani economy experienced a period of prosperity for greater than that of today.
(D) Pakistani society has developed many programs that greatly offset the consequences of the sluggish economy.
(E) Most of the job growth in the service sector can be attributed to people forced out of the declining manufacturing sector.

Question 9:

Should present trends continue, within five years it will be cheaper for audio enthusiasts to build their stereo systems around sets of separate, high quality tuners and amplifiers, rather than around integrated tuners and amplifiers, known as receivers? While receivers have been considered the necessary compromise for those with budget restrictions, recent trends in retail pricing seem destined to change that perception. The average retail price of high-quality tuner has declined at a rate of 20 percent each of the last two years and an average retail price of a high-quality amplifier has declined at the rate of 35 percent for each of those years. At the same time, the average retail price of integrated receivers has declined only twelve percent.

Q9. In evaluating the claim made in the passage above, information about which of the following would be most useful?

(A) The number of integrated receivers sold each year and the number of sets of separate tuners and amplifiers sold each year.
(B) The number of separate tuner and amplifier sets expected to be purchased over the next five years and the number of integrated receivers expected to be purchased over the next five years.
(C) The percentage of audio enthusiasts who prefer separate tuner and amplifier sets to integrated receivers.
(D) The average life expectancy of stereo tuners as compared to the average life expectancy of stereo amplifiers.
(E) The present average retail price of an integrated receiver and the present average retail price of a

tuner and amplifier set.

Semiconductors materials sold by Pacific Rim countries after 2006 are subject to the trade agreement. All microchips sold to Pacific Rum Countries after 2004 are subject to the trade agreement the trade agreement does not apply to other sales.

Q10. **Based on the above, which of the following must be true?**

(A) Microchips sold by a Pacific Rim country or semiconductors sold to a Pacific Rim country in 2005 are subject to the trade agreement.
(B) Semiconductors sold to a Pacific Rim country in 2007 are subject to the trade agreement.
(C) Semiconductors sold by a Pacific Rim country after 2004 are subject to the trade agreement.
(D) Microchips sold to a Pacific Rim country in 2005 are subject to the trade agreement.
(E) Microchips sold by a Pacific Rim country before 2006 are subject to the trade agreement.

Explanatory Answers

Q1. (D) Here, we draw the following table to find out the number of students who can:

	Urdu	*Arabic*	*Pushto*	*Hindi*	*Chinese*
Amna	✓	✓	✗	✓	✗
Bushra	✓	✓	✗	✗	✓
Chaman	✗	✗	✓	✓	✗
Dilber	✓	✓	✗	✓	✗
Ehsan	✗	✗	✗	✓	✗
Fatima	✗	✗	✗	✗	✓

From above table, we see that in the given paragraph most students speak Hindi. Thus, best answer is choice D.

Q2. (B) From table, given in question 1, we see that, Bushra can speak Urdu, Arabic and Chinese, while Chaman can speak, Pushto and Hindi. The translator should be able to know at least one of the languages from each combination.

Combination 1	*Combination 2*
Urdu, Arabic	Pushto, Hindi
Arabic, Pushto	Arabic, Hindi
Urdu, Pushto	Hindi, Chinese

We find that Amna and Dilber can act as a translator between Bushra and Chaman. Hence, best answer is choice B.

Q3. (C) If Chaman and Fatima wish to talk to each other, then Amana will talk with Chaman with Hindi and then Amna translate it in Arabic or Urdu and talk with Bushra. Since Bushra and Ehsan knows Chinese, so they will talk each other with Chinese. Here the translators are, Amna and Bushra in this case which is fewest. Hence, best answer is choice C.

Q4. (E) Take choice A, in this choice options are Amna and Fatima. Here, we draw a simple table:

	Urdu	*Arabic*	*Pushto*	*Hindi*	*Chinese*
Amna	✓	✓	✗	✓	✗
Fatima	✗	✗	✗	✗	✓

From above table, it is clear that Amna and Fatima cannot talk each other without translator. Therefore, choice A is not a best choice.

Now, take choice B and C, we analyze the given options for constructing a table.

	Urdu	*Arabic*	*Pushto*	*Hindi*	*Chinese*
Bushra	✓	✓	✗	✗	✓

Chaman	✗	✗	✓	✓	✗
Ehsan	✗	✗	✗	✓	✗

From above table, it is clear that Bushra and Chaman, Bushra and Ehsan cannot talk each other without translator. Hence, choices B and C are not correct. Here, we draw a final table to see which two persons can talk each other without translator.

	Urdu	*Arabic*	*Pushto*	*Hindi*	*Chinese*
Bushra	✓	✓	✗	✗	✓
Ehsan	✗	✗	✗	✓	✗
Fatima	✗	✗	✗	✗	✓

Clearly, from above table, we can see that Bushra and Fatima can talk each other without translator. Hence, best answer is choice E.

Q5. (D) From the given paragraph, we conclude that non-urban areas are now affected by air pollution.
In the given paragraph, the writer explain the evidence that an increase in the number of persons suffering from illnesses attributable to air pollution.
If more illnesses are now considered to be caused by air pollution then it's possible for people who had been sick for what were considered other reasons to account for the increase in the number of people suffering from illnesses caused by air pollution. The general health for the population has not necessary declined, just been reclassified, and so air pollution has not necessarily affected non-urban areas.
The argument given in choice A is that "the nation's cities have seen a marked decrease in their levels of air pollution" doesn't weaken an argument that says it's rising outside cities.
The argument given in choice B is that "A sharp decrease in the number of people moving out of its cities." This movement of people has no clear effect. The new suffering from air pollution would be non-urban, so the idea that not many urban dwellers expired from air pollution. Therefore, argument given in choice C won't weaken the argument. The statement (E) is irrelevant because there could still be lot of pollution that floated out from urban areas. Thus best answer is choice D.

Q6. (A) The main points in the given paragraph are:

1. Manufacturers of household appliances in China are introducing an array of computerized technologies.
2. On the basis of changes that have already taken place, experts product a golden age for the consumer of better designed and better-built products.

The best answer is choice A. This question asks you to draw an inference, that if true, would LEAST support the expert's claim that appliances produce by computerized technologies will be better built? Actually, the question requires you to recognize which of the choices is not mentioned in the passage as a way in which manufacturers of household appliances in China are introducing an array of computerized technologies in the work of many of their factories is an effort to regain a lead eroded by international competition.

Q7. (C) The main points of the given paragraphs are:

1. Aagha Khan Blood Bank buys blood only from qualified donors.
2. The donor must weigh at least 105 pounds.
3. The donor must have not taken malaria medication in the last three years.
4. The donor must neither have had hepatitis.
5. The donor must never have used intravenous drugs.
6. Aagha Khan Blood Bank, staff knows that traveling can effect for blood donation.
7. Everyone who travels to Malaysia is required to take malaria medicine.
8. No one who enters Singapore can have ever used intravenous drugs.
9. Everyone traveling to Gorisimi gets hepatitis.

Take choice A, which says that, traveling to Malaysia two years ago. According to point 3, the

donor must have not taken malaria medicine in the last three years, but in the given paragraph it has clearly mentioned that the donor must have not taken malaria medicine since last three years. Thus the person will automatically disqualify if he had traveled to Malaysia two years age. Hence, choice A is not acceptable. According to choice B, the recent weigh of the person is 95 pounds. This choice is also not acceptable, because according to point 2, the weight of the donor must be at least 105 pounds. Choices D and E are also not acceptable because any person traveling to Gorisimi gets hepatitis, but in the given paragraph clearly mentioned that the person must neither have had hepatitis. The word in this statement which denies the argument D is "had", because person who had gone to Gorisimi five years ago, must had hepatitis five years ago. Similarly, according to choice E, using intravenous drugs that were legal at the time is also irrelevant because, clearly it has been declared in the given paragraph that the donor must never had used intravenous drugs either it is legal or illegal. The best answer is choice C, because, denied admission to Singapore may not be the only cause for using intravenous drugs. It may be the cause of:

1. Documents
2. Financial position
3. Visa problems, etc.

Hence, best answer is choice C.

Q8. (E) In the given paragraph, the writer identify following points:

1. There is a steady stream of pessimistic forecasts.
2. But, there is continuous grow and prosper in our economy.

The author argues due to the following facts:

(a) Over the last 15 years the service sector of our economy has greatly expanded *i.e.*,
"Last year alone, 49000 Pakistanis found employment in the service sector."

The whole concept of economy development circles around the idea that if the ratio of the employment increases then the country involves economic growth.

Argument given in choice A is also accepts the author's idea about economic growth. This choice not completely undermines the author's idea, so this choice is not acceptable. Choice B to D also not completely undermines the author's idea. Actually, the conclusion of the given paragraph is that one of the sign of economic growth is increased in economy. The only choice that denies this argument is choice E. Hence correct answer is choice E.

Q9. (E) In the given paragraph, the author predicts about the fast advancement of audio that if the advancement of audio system will continue for the next three years then:

1. It is possible for audio lovers to build cheaper stereo systems, consisting of separate high quality tuners and amplifiers rather than receivers.
2. Receivers have been considered the necessary compromise for those with budget restrictions.
3. Recent trends in retail pricing has changed that perception.
4. The average retail price of high-quality tuner has declined at a rate of 20 percent each of the last two years.
5. The average retail price of a high quality amplifier has declined at the rate of 35% for each of those years.
6. The average retail price of integrated receivers has declined only 12%.

First of all we draw the conclusion from above paragraph.

Conclusion:

Since the last two years the average retail price of high-quality tuner has declined at a rate of 20%, also the retail price of high quality amplifier has declined at the rate of 35% during this period. Lastly, the average retail price of integrated receivers has declined 12%.

Now, take choice A and try to analyze it. Choice A says that, the number of integrated receiver sold each year and the number of sets of separate tuners and amplifiers sold each year, if this information is given, then it may not be significant. Choices A to D focus only the quantity or percentage quantity purchase or average life. The information given from choices A to D if

determined may not be as useful as in choice E. According to points 2 to 6 which extracted from the given paragraph. All focus upon the retail price or average retail price. Thus the information about price may be useful to estimate the trend.
Hence, best answer is choice E.

Q10. (D) The main points of the paragraph are:
1. Semiconductor materials sold by a Pacific Rim continue after 2006 are subject to the trade agreement.
2. All microchips sold to Pacific Rim countries after 2004 are subject to the trade agreement.

Conclusion:
First of all, in 2004, all microchips sold to Pacific Rim countries subject to the trade agreement. It means the supply will continue in 2005-06 under the agreement in 2004 till a new agreement in 2006. Thus the best answer is choice D.

TEST NO. 7

Questions 1-6:
Nine athletes attend a sports banquet at Iqbal Stadium, Lahore. Three of the athletes — A, B and C — are varsity football players, two of the athletes — D and E — are varsity basketball players. The other four athletes — L, M, N and O — belong to the hockey club. All nine athletes will be seated at three small tables, each seating three athletes. The athletes must be seated according to the following rules:
L and A do not sit at the same table.
M sits together with at least one of B or D.
There can be at most only one football player at a table.
There can be at most only one basketball player at a table.

Q1. Suppose just one varsity athlete sits at a certain table, and that athlete happens to be A. If so, who else sits with A?
(A) M, N *(B)* M, O *(C)* N, O
(D) L, N *(E)* L, M

Q2. If a table consists of C, N and O, which of the following trios sits at one of the other tables?
(A) B with D and L *(B)* B with E and L *(C)* A with P and L
(D) A with B and E *(E)* D with E and M

Q3. Which trio could sit together?
(A) M, O and L *(B)* D, E and L *(C)* B, E and L
(D) B, D and L *(E)* A, N and L

Q4. A and D are seated at one table. Which of the following are possible seating arrangements for the remaining two tables?
(A) B with L and O, C with E and M *(B)* B with M and N, C with L and O
(C) B with O and D, E with N and O *(D)* C with E and L, B with N and O
(E) L with M and N, B with E and O

Q5. Which of the following must be true?
(A) A is sitting with a basketball player.
(B) Exactly one hockey player is sitting at C's table.
(C) No hockey players sit at one table.
(D) A basketball player is sitting with L.
(E) A football player sits with two hockey players.

Q6. Which of the following pairs will not sit with P?
(A) A, D *(B)* B, C *(C)* B, D
(D) B, L *(E)* C, D

Questions 7-8:
The primary evil of today's society is selfishness. People are concerned only with themselves. Personal

advancement is the sole motivating force in our world. This is not to say that individuals are never willing to help one another; on the contrary,..... However, these are only short-term occurrences which ultimately serve our long-term goal of personal gain.

Q7. **To fill in the blanks in the above passage, select one of the options from the below mentioned options:**

(A) We are always trying to undermine other's endeavours.
(B) My uncle Hamid used to help me with my math homework.
(C) No one can be trusted, not even close friends.
(D) There are many occasions when we graciously offer our assistance.
(E) Our yearning for power prevents us from understanding our existential purpose.

Q8. **Which statement would most strongly contradict the author's attitude toward society?**

(A) Altruism is society's greatest strength.
(B) The forces of good will ultimately triumph over evil.
(C) Our short-term actions may ostensibly contradict our long-term goals.
(D) We must all learn the art of selfishness.
(E) Morality is the bedrock of a growing community.

Questions 9-10:

The microwave oven has become a standard appliance in many kitchens, mainly because it offers a fast way of cooking food. You, some homeowners believe that the ovens are still not completely safe. Microwave, therefore, should not be a standard appliance until they are more carefully researched and tested.

Q9. **Which of the following, if true, would most weaken the conclusion of the passage above?**

(A) Those homeowners in doubt about microwave safety ought not to purchase microwaves.
(B) Homeowners, often purchase items despite knowing they may be unsafe.
(C) Research and testing of home appliances seldom reveals safety hazards.
(D) Microwaves are not as dangerous as steam iron, which are used in almost every home.
(E) Homeowners often purchase items that they do not need.

Q10. **Which one of the following, if true, would most strengthen the conclusion of the passage above?**

(A) Modern homeowners have more free time than ever before.
(B) Food preparation has become almost a science, with more complicated and involved recipes.
(C) Homeowners often doubt the advertised safety of all new appliances.
(D) Many microwave ovens have been found to leak radioactive elements.
(E) Speed of food preparation is not the only concern of today's homeowner.

Explanatory Answers

Q1. (C) The main points of the given paragraph are:

1. Nine athletes attend a sport banquet at Iqbal Stadium.
2. A, B and C are varsity football players.
3. D and E are varsity basketball players.
4. L, M, N and O belong to the hockey club.
5. All nine athletes will be seated at three small tablet.
6. Each seating three athletes.
7. L and A do not sit at the same table.
8. M sits together with at least one of B or D.
9. There can be at least only one football player at a table.
10. There can be at most only one basketball player at a table.

Take choice "A", M, N. Since, M sits together with at least one of B or D. In this combination may be B, M, N or D, M, N. If this choice is accepted then the combination will be A, M N. In this

combination, since M cannot sits without B or D. So, this choice is not acceptable.
Now, take choice "B", which is "M, O". Here, M is also without B or D, if we combine it with A. So, this choice is also not acceptable.
Take, choice "C" which is N, O. Combining it with A, we get A, N, O. In this combination, point 6 satisfied, because there are three athletes on a table. Point 7 is also satisfied, because A is without L. Point 8 is also satisfied because M is absent. Point 9 is also satisfied, since there is at least one football player at a table, which is A. It also satisfied point 10. Hence, correct answer is choice C.

Q2. (B) In the given premise, C, N and O set at one table. Then
Choice A is; B with D and L. According to point 8, since, B and D are without M. So this combination is not acceptable. Take choice "B", which is, B with E and L. This choice is acceptable, because:

1. In, B, E and L; there are three athletes at one table, so point 6 is satisfied.
2. Since, L is not with A, so point 7 is also satisfied.
3. If this combination is accepted, then M may sit with "D" either then B. So point 8 is also satisfied.
4. Since, B is one football player at a table, so point 9 is also satisfied.
5. Here, E is the only most basketball player in the given choice, so point 10 is also satisfied.

Since, choice "B" satisfies all the given conditions. So, correct answer is choice B.

Q3. (C) In choice A; M is without B or D. So according to point 8, this trio is not acceptable. In choice B; there is no any football player in the trio, D, E and L. So according to point 9 which says that, there can be at least only one football player at a table, is rejected. Now, take choice C; B, E and L, since, this combination satisfies all the given condition, so this choice may be acceptable. Choice "D" is rejected because in this choice B and D is without M, so according to point 8, this choice is not acceptable. In choice E, A is sitting with L at a single table, so according to point 7 this combination is also not acceptable. Hence, best answer is choice C.

Q4. (D) Take choice (A), which says that, B with L and O, C with E and M. The second part of this choice is not acceptable, because, C with E and M mean that M will sit with C and E, but according to point 8, M sits together with at least one of B or D. Here, M is without B or D. Now, take choice (B), according to this choice, the seated arrangement with other tables are B with M and N; C with L and O. If this combination is accepted, then one basketball player E will left and will join the athletes at table 1. Then the players at the table 1 will be A, D and E. In this combination, two basketball players D and E represent. But according to the given condition (point 10), there can be at most only one basketball player at a table. So this choice is also not acceptable.
In choice (C), the combination is B with O and D, E with N and O. The second part of this combination is not acceptable, because, in this combination E, N and O, none of any football player is present. So, this choice is also not acceptable.
The choice (D) is the correct combination, which satisfies all th given conditions, in choice (D), the combination is, C with E and L, B with N and O. In C with E and L;
C is only one football player (condition 9 satisfied).
E is only one basketball player (condition 10 is satisfied).
Since L is without A (condition 7 is satisfied).
The second part of this choice is: B with N and O. In this combination, there is only one football player which satisfy the condition 9. There is no basketball player in this combination, since, the two basketball players are adjusted at table 1 and 2.
Hence, correct answer is choice (D).

Q5. (E) Take, choice A, which says that, "A is sitting with a basketball player". If A sits with D, where D is a basketball player. Then L cannot sit with A, because according to point 7, L and A does not sit at the same table. So, this combination is not acceptable. In this way we can prove that a true statement is that, a football player sits with two hockey players. So, best answer is choice (E).

Q6. (B) Take choice A, then the combination is A, D, M. This combination is acceptable because M can sit

with A and D. Now, take choice B, according to this combination B, C and M is not acceptable because according to point 9, there can be at least only one football player at a table. If this combination is accepted, then A may sit with L. Then a combination A, L and E may be formed, which is not acceptable, because according to point 7, L and A do not sit at the same table. Hence, the best answer is choice B.

Q7. (D) In order to complete the missing phrase of the passage, we are looking for a phrase which would negate the claim that individuals are never willing to help one another. Of the five choices presented, only choice D fits the context and tone of the passage. Choices A and C support the assertion that individuals are never willing to help one another. However, this is the opposite of what we are looking for. Choice E is clearly irrelevant. Choice B, though logically a feasible answer, does not fit as well into the tone of the passage as does choice D.

Q8. (A) In the given paragraph, from beginning to end the writer expounds on the theme that selfishness is the major evil of today's society. If other words, selfishness is harmful to society. Choice A which maintains that altruism — *i.e.,* extreme unselfishness — is society's greatest strength, clearly contradicts the writer's argument. Hence, correct answer is choice A. The choices B and E represent philosophical concepts and are not pertinent to the passage at hand. Similarly, choices C and D are not contradicted by the text, and thus may be neglected.

Q9. (E) In the given paragraph, the author expounds on safety concern. Therefore, the conclusion of the given passage is that, because of safety concern, research, technology and testing ought to be done before microwave become standard household appliances. According to choice C, research and testing of home appliances seldom reveals safety hazards, if we accept this argument then research and testing would be irrelevant. This argument seriously weakens the conclusion. Hence, best answer is choice C.

Q10. (E) The interesting argument has given in choice D, which says that many microwave ovens have been found to leak radioactive elements. Since, the conclusion of the paragraph is safety concerns about standard household appliances. Therefore, if microwave ovens have been found to leak radioactive elements, then more safety, research and testing ought to be done. Hence, the strengthen the conclusion of the given paragraph is choice D.

TEST NO. 8

Questions 1-6:

In a computer, data transfer-cable plant, cables are assembled by twisting plastic-coated wires together. There are wires of exactly six different solid colours — red, purple, pink, green, orange and black — wires must be assembled into single cables according to the following rules:

Each cable must contain at least three wires and wires of at least three different colours.

These cables are joined by the following rules:

At most two wires in a single cable can be black.

At most two wires in a single cable can be orange.

There can be at most one wire of each of the other colours in a single cable.

If one wire is red, then one wire must be purple.

If one wire is pink, then no wire can be green.

Q1. Which of the following could be the complete set of wires in an acceptable cable?

(A) A green wire, an orange wire, and a pink wire.

(B) A pink wire, a black wire, and an orange wire.

(C) A red wire, a black wire, and a green wire.

(D) A purple wire and exactly two black wires.

(E) Exactly two black wires and exactly two orange wires.

Q2. The maximum number of wires that can be used in an acceptable cable is:

(A) 6

(B) 7

(C) 8

(D) 5

(E) 4

Q3. If an orange wire and a pink wire must be among the wires chosen for a particular cable, any of the following pairs of wires could complete the cable EXCEPT a:

(A) Black wire and a second orange wire. *(B)* Purple wire and a second orange wire.
(C) Purple wire and a black wire. *(D)* Red wire and a purple wire.
(E) Red wire and a black wire.

Q4. If there is an additional requirement that pink must be used if purple is used, which of the following must be true?

(A) No cable contains fewer than six cables. *(B)* Red is always used if pink is used.
(C) Black is used exactly once if purple is used. *(D)* Green is never used if red is used.
(E) No cable contains more than five wires.

Q5. If an assembled cable consists of exactly five wires, each a different colour, it could be true that a colour NOT used is:

(A) Orange *(B)* Purple *(C)* Red
(D) Green *(E)* Black

Q6. If exactly one black wire and exactly one orange wire are used in an assembled cable, which of the following must be true?

(A) The cable contains no more than five wires. *(B)* The cable contains a purple wire.
(C) The cable does not contain a pink wire. *(D)* The cable does not contain a red wire.
(E) The cable contains exactly six wires.

Questions 7-9:

In a meeting room, six people, P, Q, R, S, M and N are seated about a round table. Every chair is placed equidistant from adjacent chairs.

1. M is seated next to R.
2. S is seated 3 seats from R.
3. P is seated 2 seats from N.

Q7. Which of the following must be true?

I. P must be seated next to Q. II. P must be seated next to S.
III. M and Q are separated by one seat.

(A) I only *(B)* II only *(C)* III only
(D) II and III only *(E)* neither I, II or III

Q8. If P refuses to sit next to M, which necessary follows?

I. N must sit next to M II. Q and R are two seats apart.
III. Q and S are both next to N

(A) I only *(B)* II only *(C)* III only
(D) I and II only *(E)* II and III only

Q9. Which of the following is necessarily true?

(A) The linear distance from S to R is greater than the linear distance from N to M.
(B) The linear distance from P to Q is equal to the linear distance from M to N.
(C) The linear distance from R to M is equal to the linear distance from P to S.
(D) The linear distance from M to Q is equal to the linear distance from P to M.
(E) The linear distance from R to S is equal to the linear distance from P to Q.

Travelers may enter and remain in the republic for up to 57 days. If a travelers are to stay for more than seven days, however, a special visa is required.

Q10. If the statements above are true, which of the following must also be true?

(A) Travelers who are staying in the Republic for 15 days must have a special visa.
(B) Many travelers who stay in the Republic do not need visas.
(C) Some travelers who stay in the Republic for more than seven days do not have to appropriate visas.
(D) Travelers who stay less than seven days in the Republic do not need visas.
(E) Travelers who merely pass through the Republic while en route to other destinations do not need visas.

Explanatory Answers

Here, we summarize the given paragraph in the form of important points:

1. In the plant, there are wires of exactly six different colours are formed.
2. The colours used in wires are: Red, Purple, Pink, Green, Orange and Black
3. Wires must be assembled into single cable according to the given rules.

Rules:

Wires are assembled into single cable according to the following rules:

1. Each cable must contain at least three wires and wires of at least three different colours. These three cables are joined by the following rules:
2. At most two wires in a single cable can be black.
3. At most two wires in a single cable can be orange.
4. There can be at least one wire of each of the other colours in a single cable.
5. If one wire is red, then one wire must be purple.
6. If one wire is pink, then no wire can be green.

Q1. (B) This is an analytical reasoning question, so we analyze the given options in order to find the correct choice.

In choice A, the given combination is

Colour	*No. of wires*
Green	1
Orange	1
Pink	1

Conclusion: This combination is rejected.

Inference: From given condition:

(i) Each cable must contain at least three different wires. True

(ii) Wires of at least three different colours. True

(iii) At most two wires in a single cable can be black. True

(iv) At most two wires in a single cable can be orange. True

(v) Three can be at least one wire of each of the other colours in a single cable. True

(vi) If one wire is red, then one wire must be purple. True

(vii) If one wire is pink, then no wire can be green. False

In choice B, the combination is:

Colour	*No. of wires*
Pink	1
Black	1
Orange	1

Conclusion: The combination is acceptable.

Inference: From the given condition:

(i) Each cable must contain at least three different wires. True

(ii) Wires of at least three different colours. True

(iii) At most two wires in a single cable can be black. True

(iv) At most two wires in a single cable can be orange. True

(v) Three can be at least one wire of each of the other colours in a single cable. True

(vi) If one wire is red, then one wire must be purple. True

(vii) If one wire is pink, then no more can be green. True

Since, this combination satisfies all the given conditions. So this choice is acceptable. In choice C, the combination is:

Colour	*No. of wires*
Red	1
Black	1
Green	1

Conclusion: This combination is not acceptable.
Inference: According to the condition that, if one wire is red, then one wire must be purple, is not satisfied in the given combination. Since, here, red is without purple.
In choice D, the combination is:

Colour	*No. of wires*
Purple	1
Black	2
×	×

Conclusion: The combination given in choice D is not acceptable.
Inference: Since, one of the given conditions is that each cable must contain at least three wires and wires should be at least three different colours, so this condition is not satisfied in the given combination.
In choice D, the combination is:

Colour	*No. of wires*
Black	2
Orange	2
×	×

Conclusion: The given combination is not acceptable.
Inference: Since, one of the given conditions is that, wires should be at least three different colours; the given combination does not satisfy this condition. So this choice is not acceptable.
Hence, from the given combination only one combination given is choice B is true. Hence, best answer is choice B.

Q2. (B) To find the maximum number of wires in a cable we use the conditions given in the question. Here

1. At most two wires in a single cable can be black.

   Therefore, number of black wires in a cable = 2

2. At most two wires in a single cable can be orange.

   Therefore, maximum number of orange wires in a cable = 2

3. There can be at most one wire of each of the other colours in a cable.

   Therefore, maximum number of wires except black and orange = 3

Total no. of maximum wires in a cable = 2 + 2 + 3 = 7
The combination of the maximum wires in a cable may be:

Colour	*No. of wires*

Black	2
Orange	2
Red	1
Purple	1
Green or Pink	1

Hence, best answer is choice (B).

Q3. (E) We analyze the given options by putting orange and pink wire between the wires given in the options:

Choice A: Black, Orange, Pink, Orange

The given conditions are:

1. Each cable must contain at least three wires.
   Since, there become four cables in each choice. So all the five given choices satisfy this condition.
2. Wires should be at least three different colours.
   Choices A to E satisfy all this condition.
3. At most two wires in a single cable can be black.
   Choices A to E all satisfy this condition.
4. At most two wires in a single cable can be orange.
   All the five choices from A–E satisfy this condition.
5. There can be at least one wire of each of the other colours in a single cable.
   All the five choices from A–E satisfy this condition.
6. If one wire is red, then one wire must be purple.
   All the five choices EXCEPT choice E satisfy this condition.

Hence, correct answer is choice E.

Q4. (D) If the new condition is imposed. That is "Pink must be used if purple is used", then

Choice A: "No cable contains fewer than six cables" is rejected, because there are total six coloured cables. These are:

Red, Purple, Pink, Green, Orange, Black

Now, according to the condition that, if one wire is red, then one wire must be purple, the combination becomes

Red, Purple, Pink, ~~Green~~ , Orange, Orange, Black, Black

which have seven cables also satisfy the choice A. But the combination:

Colour	*No. of wires*
Black	2
Orange	2
Green	1
Total	5

Hence, choice A is not correct. Now

Choice B: According to this choice:

"Red is always used if pink is use."

Condition given in the paragraph is:

"If one wire is red, then one wire must be purple."

Also, the condition given in the question is:

"Pink must be used, if purple is used."

Now, we analyze the above three conditions.

If we do not use purple then pink cannot be used. But another condition says that, if one wire is red,

then one wire must be purple. So red and purple wires are necessary to each other, but it is not necessary that if purple is used, then other wires cannot be used. In this case, the given choice is not acceptable. Now

Choice C: According to this choice:

"Black is used exactly once, if purple is used."

The choice is also not acceptable, because there is not any link between purple and black wires. Now

Choice D: According to this choice:

"Green is never used, if red is used."

Suppose, we use red wire, then according to the condition given in the paragraph, which says that "If one wire is red, then one wire must be purple." Thus two wires are red and purple. Also, restriction given in the question is that, pink must be used, if purple is used. Thus from these two conditions, if we use red wire than purple and pink must also be used. But condition given in the paragraph is, if one wire is pink, then no wire can be green. Thus green is never used, if red is used.

Choice E: According to this choice:

"No cable contains more than five wires."

This choice is not acceptable, because, for example, the combination given in the following table contains more than five wires.

Colour	*No. of wires*
Red	1
Pink	1
Purple	1
Orange	2
Black	2
Total	7

Hence, best answer is choice D.

Q5. (E) We examine the given choices and try to determine the combination if five wires of exactly five colour:

Choice A: Orange, black, red, purple, pink

Choice B: Purple, pink, red, orange, black

If we continue this, we find that colour green not fit in the given condition. Thus the correct answer is choice E.

Q6. (A) If we use only one black and one orange wire in an assembled cable. Then

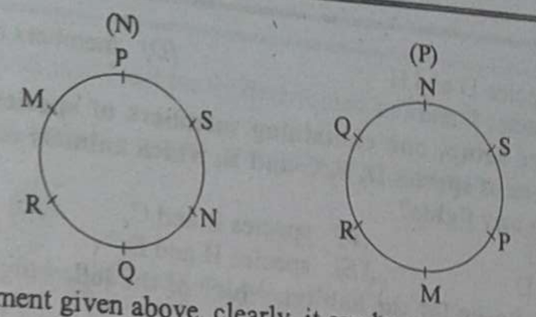
Choice A: According to this choice, the cable contains no more than five wires.

We try to make a combination of wires more than five wires to falsify the given argument.

Colour	*No. of wires*
Black	1
Orange	1
Pink	1
Purple	1
Red	1
Total	5

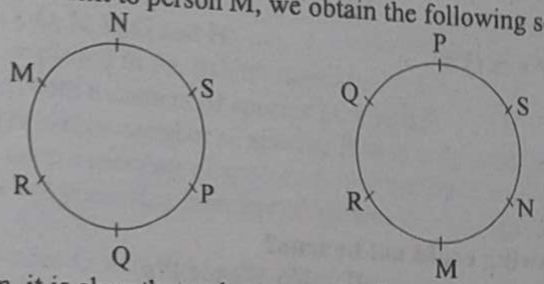
Therefore, it cannot be possible to find the number of cables more than five according to the given condition. Hence, choice A is a correct choice.

Q7. (D) Here, we try to find the possibilities for seating arrangement is as follows:



The seating arrangement given above, clearly, it can be seen that statements II and III must be true. Hence, best answer is choice D.

Q8. (A) If person P refuses to sit next to person M, we obtain the following seating arrangements:



From above diagram, it is clear that only statement I is correct. Hence, best answer is choice A.

Q9. (C) The seating arrangement given in question 7 shows that the linear distance from R to M is the same as the linear distance from P to S. None of the other statements (A), (B), (D) or (E) is always true. Hence best answer is choice (C).

Q10. (A) The main points of the paragraph is:

1. Travelers may enter and remain in the Republic for up to 57 days.
2. If a traveler is to stay for more than seven days, however, a special visa is required.

The cue word in the given paragraph is special. The writer clearly state that in order to stay more than 15 days must have a special visa. Thus a traveler who wants to stay less than 15 days require a visa not a special visa. Actually, the writer wants to say that in Republic, travelers may enter and stay less than 15 days, this required not special visa, but if he wants to stay more than 15 days a special visa is required. The argument closest to the passage given in choice A. thus, best answer is choice A.

TEST NO. 9

Questions 1-4:

Individual members from animal species are to be chosen from a special exhibit habitat. The eight species are A, B, C, D, E, F, G and H. Because of the way these animals interact, certain guidelines must be followed.

Animals that will fight cannot be placed in the habitat together.

Members of species G will fight with members of species D, E and F.

A member of species C will fight with a member of species B, but only if a member of species G is present. If a member of species H is present, a member if species A will not fight with any animal. If a member of species H is not present, a member of species A will fight with members of species B and C.

No fights other than those described above will occur.

Q1. If G is chosen for the habitat, which of the following CANNOT also be chosen?

(A) A *(B)* B *(C)* E

(D) C *(E)* H

Q2. If two other animals are to be added to a habitat containing a member of species B and a member of species G in the habitat, which of the following could be those two animals?

(A) members of species H and A *(B)* members of species C and A

(C) members of species D and H
(D) members of species H and C
(E) members of species F and C

Q3. If two habitats are setup, one containing members of species A, B, H and G, and the other containing members of species D, F, C and E, which animals could be switched one for the other without provoking any fights?

(A) species H and F
(B) species B and C
(C) species A and C
(D) species G and D
(E) species H and E

Q4. If D, A and C are chosen for the habitat, which of the following must also be chosen?

(A) H
(B) G
(C) F
(D) E
(E) B

Questions 5-7:

All R's are either P's or Q's.
All P's are R's.
All Q's are R's.
No Y's are Z's.
Some Q's are Z's.
Not all Z's are R's.

Q5. Which of the following could not be true?

I. No Y's are R's
II. No Y's are P's
III. No Z's are R's
IV. No Y's are Q's

(A) I only
(B) II only
(C) III only
(D) IV only
(E) I and IV only

Q6. Which is inconsistent with the above set of statements?

I. Some Z's are P's
II. Some Z's are Q's
III. Some Z's are neither P's nor Q's
IV. All Y's are P's
V. Some Z's are Y's

(A) I and V only
(B) II and V only
(C) II and III only
(D) IV only
(E) V only

Q7. If all X's are either P's or Q's, then which of the following is necessarily false:

(A) All X's are R's
(B) All P's are X's
(C) Some Q's are X's
(D) All X's are H's
(E) All Z's are X's

Study of many events have shown that families who install smoke detectors and own fire extinguishers have a reduced risk of losing a child in a house fire. Therefore, no family who installs smoke detectors and owns a fire extinguisher will lose a child in a house fire.

Q8. Which of the following, the best criticism of the argument does not?

(A) It differentiate between the two causes of house fires: cooking and heating.
(B) take into account that families who buy smoke detectors are also more likely to purchase fire insurance.
(C) take into account the possibility of losing a child in a house fire despite all precautionary measures.
(D) cite the fact that smoke detectors have proven to be effective in waking sleeping children during a house fire.
(E) indicate that fire extinguishers are effective during early stage of fire.

Although there are no physical differences between the visual organs of the two groups, the inhabitants of the Bilge Islands, when shown a card displaying a spectrum of colours, perceive fewer colours than do most persons in the United States.

Q9. Which of the following conclusions can most reliably be drawn from the information above?

(A) Differences in social structure probably affect colour perception.
(B) Bilge Islanders may have fewer terms denoting colours in their language than do English-speaking persons.
(C) Colour perception in humans is influenced by differences in physical environment.

(D) Human colour perception is at least partly determined by factors other than the physical structure of the visual organs.

(E) The Bilge Islanders are probably taught in childhood to recognize fewer colours than are persons in the United States.

Explanatory Answers

In the given paragraph, the main points are:

1. There are eight species; A, B, C, D, E, F, G and H.
2. Animals that will fight cannot be placed in the habitat together.
3. Members of species G will fight with members of species D, E and F.
4. A member of species C will fight with a member of species B, it is only possible in the presence of G.
5. If a member of species H is present, a member of species A will not fight with any animal.
6. If a member of species H is not present, a member of species A will fight with members of species B and C.

Q1. (B) According to point 3, species G will fight with members of species D, E and F. In choice C, only species C has given, so choice C is rejected. If 'A' is chosen, then according to point 5 which say that, "If a number of species H is present, a member of species A will not fight with any animal. Thus if choice A is accepted then A will fight with species G. Thus choice A is also not acceptable. The only acceptable choice is choice C.

Q2. (A) In the given question, we find that there should be four animals including species B and G. We have to find the other two. We analyze the given choices:

Choice A: "members of species H and A".

According to point 3, G cannot sit with species D, E and F. In the given choice H and A species have given but neither H nor A present. Thus this choice satisfy point 3. Point 4 is not relevant to the choice A. According to point 5, if a member of species H is present a member of species A will not fight with any animal; In this choice the combination become, H, A, B and G. Thus, this combination also satisfy the point 5. Since, choice A satisfies all the given conditions. Thus best answer is choice A.

Choice B: "members of species C and A".

In point 4, it is clearly mentioned that, A member of species C will fight with a member of species B but it is only possible in the presence of G. If we combine all these four species, that is, B, G, C and A. Thus, in this case B will fight with species C in the presence of G. So this choice is not acceptable.

Choice C: "members of species D and H".

If we include D and H species with B and G. Then the combination, D, H, B and G, is rejected, because according to point 3, members of species G will fight with members of species D, E and F. Hence, this choice is not acceptable.

Choice D: "members of species H and C".

The combination including H and C becomes 'B, G, H, C'. Since members of species C will fight with a member of species B in the presence of G. Here, both B, C and A are combined. So, this choice is not acceptable.

Choice E: "members of species F and C".

Here, the combination including F and C is

B, G, F, C

Since, B and C are both present in the presence of species G. So, B and C will fight each other. Hence this combination is also not acceptable.

The only correct combination has been given in choice A which satisfies all the given

requirements. Hence, best answer is choice E.

Q3. (A) The two habitats are:
(i) A, B, H and G
(ii)D, F, C and E
Choice A: "species H and F"
Replacing it the combinations become:
(iii) A, B, F and G
(iv) D, H, C and E
In combination (iii), A and B are present in the absence of H. But according to point 6, if a member of species H is not present, a member of species A will fight with members of species B and C. So this replacement is not possible.
Choice B: "species B and C"
The combination becomes by switched one for the other becomes:
(i) A, C, H and G
(ii)D, F, D and E
If we use above points and plug in the given choice, we find only choice A is not possible. So, you must mark choice A.

Q4. (D) The given habitat are:

"D, A and C"

Choice A: Then the habitat becomes

D, A, C and H

which is clearly not acceptable.
Choice B: The habitat becomes

D, A, C and G

Since, according to point 3, members of species G will fight with members of species D, so this choice is also not acceptable.
Choice C: The habitat becomes

D, A, C and F

Since, H is not present, so A will fight against C. So, this choice is also not acceptable.
Choice D: The habitat becomes

D, A, C and E

Since, this choice satisfy all the given condition.
Hence, best answer is choice D.

Diagrams 5-7:
Here, we draw the diagram and logical statement to illustrate the given six statements:

"All R's are either P's or Q's"

$\forall$ R $\longrightarrow$ PVQ and

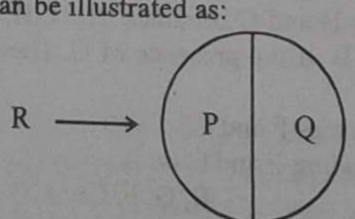
"All P's are Q's"

$\forall$ P $\longrightarrow$ Q and

"All Q's are R's"

$\forall$ Q $\longrightarrow$ R

The above three statements can be illustrated as:



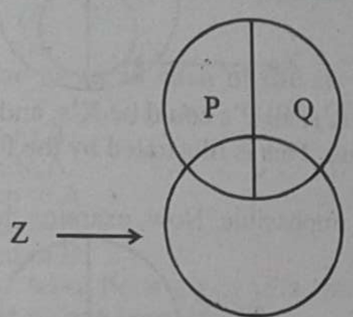
The above circle represents "All R's". Since some members of the circle are P's and the rest of the members are Q's. Thus no P's are Q's. In mathematics, the logical statement PVQ is equivalent to

Q5.

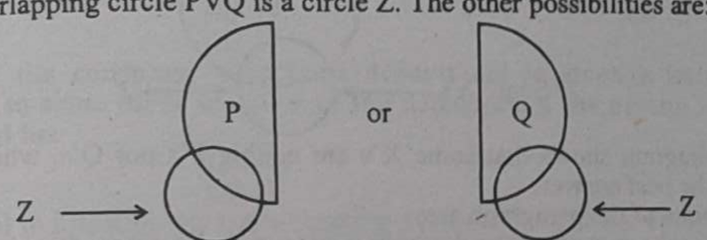
Q6.

Q7.

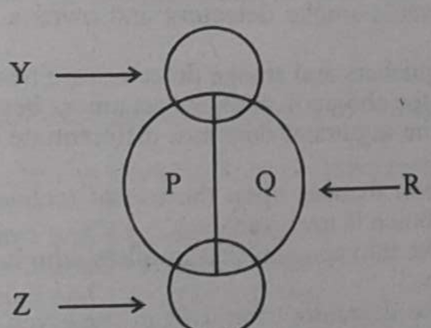
PUQ. Thus the whole circle represents PUQ.
Now, we further state "Some R's are Z's" and "Not all Z's are R's." Thus our diagram will now look like:



The circle overlapping circle PVQ is a circle Z. The other possibilities are:

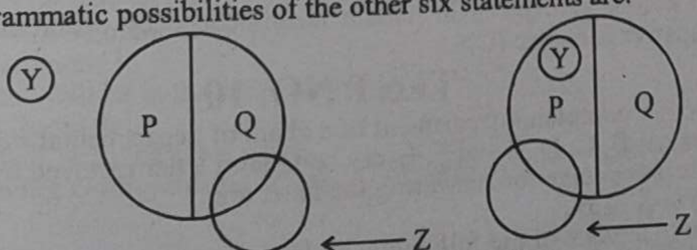


Now the statements, "No Y's are Z's" being imported with the other five statements, can be represented as follows:



The upper small circle represents "Y's"

The other diagrammatic possibilities of the other six statements are:

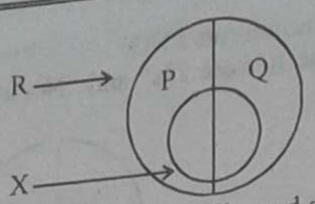


Now, we analyze the given questions from above illustration.

Q5. (C) From diagram (2), we see that statements I, II and IV could be true. Statement III, however could not be true. Hence, correct answer is choice C.

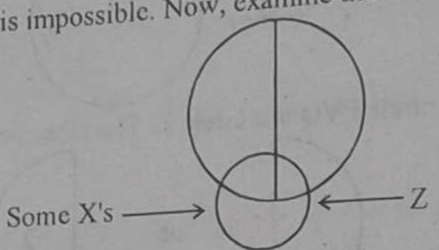
Q6. (E) In diagram (a), it is clear that statements, I, II and III are not inconsistent with the original set of given statements. We can see in diagram (3) that "All Y's are A's" is possible. Thus statement IV is not inconsistent. However, the statement, "some Z's are Y's" is inconsistent, since "No Y's are Z's". Hence, correct answer is choice E.

Q7. (E) "All D's are either, P's are Q's" can be represented by the following diagram:



We can see that all X's are R's, all P's could be X's, and some Q's are X's. All X's and Z's could be true. This is illustrated by the following diagram:

However, all Z's are X's is impossible. Now, examine the following diagram:



The above diagram shows that some X's are neither P's nor Q's, which is contradiction. Hence, choice E is the best answer.

Q8. (C) The main points of the paragraph are:

1. Families who install smoke detectors and own fire extinguishers have a reduced risk of losing a child in a house.
2. No family who installs smoke detectors and owns a fire extinguisher will lose a child in a house fire.

Conclusion: Fire extinguishers and smoke detectors are best for child's safety.
Analysis: If we plug in the choice A, then the argument becomes:
"The best criticism of the argument does not differentiate between the two causes of house fires: cooking and heating."
Since the given paragraph focuses upon the use of technology for house safety but does not on causes of fire. So, this choice is irrelevant.
Choice B, says that, "take into account that families who buy smoke detectors are also more likely to purchase fire insurance."
Fire insurance and smoke detectors cannot fit in the given paragraph. Since, smoke detectors and fire extinguishers are life saving devices and fire insurance is not a device for life saving. It is used to make good the loss with fire. So this choice is also not acceptable. The best answer of the given paragraph is choice C.

Q9. (C) Since human colour perception in human is influenced by differences in physical environment. Hence, best answer is choice (C).

TEST NO. 10

Questions 1-6: The customer complaint department of a chain of departmental stores firm employs exactly six people who answer letters: A, B, C, D, E and F. Every complaint letter received by the department is classified as either Red or Blue. The procedures for answering the letter are:
Red letters are given first to A or B.
Blue letters are given first to anyone of the following: A, D or C.
If a letter raises a problem that cannot be resolved by the person to whom it is given, it must be forwarded until it reaches someone who can resolve the problem and answer the letter. A letter must be forwarded as follows:
By A to C if the letter is Red, but to D if the letter is Blue;
By B to either A or C;
By C to D if the letter is Red, but to E if the letter is Blue;
By D to either C or E whether the letter is Red or Blue;
By E to F whether the letter is Red or Blue. F answers every letter given to him.

Q1. Any of the following can be true EXCEPT:
(A) A forwards a red letter to C *(B)* B forwards a red letter to A . *(C)* B forwards a red letter to C
(D) C forwards a red letter to E *(E)* D forwards a red letter to C

Q2. A blue letter could reach F via which of the following sequences of people?

(A) A to B to E (B) A to C to D (C) A to D to E
(D) C to B to D (E) C to A to D to E

Q3. **Any letter that reaches F must have been previously given to:**
(A) A (B) B (C) C
(D) D (E) E

Q4. **Which of the following could be given to each of the six members of the consumer complaint department in turn?**
(A) A red letter that is first given to B.
(B) A red letter that is first given to A.
(C) A blue letter that is first given to A.
(D) A blue letter that is first given to C.
(E) A blue letter that is first given to D.

Q5. **Any letter that reaches F must have been given to a minimum of how many members of the customer complaint department before reaching F?**
(A) 5 (B) 4 (C) 3
(D) 2 (E) 1

Q6. **If a member of the consumer complaint department is given a letter that he or she had previously given to some other member of the department, the person who is given the letter a second time could be:**
(A) A (B) B (C) D
(D) E (E) F

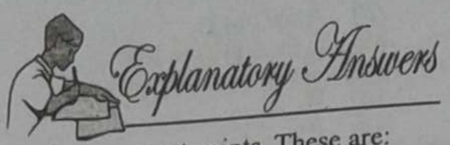
Questions 7-10: A school is introducing a new testing system. To test the system, three trainers (Latif, Mehak and Osaf) and three dogs (Lottie, Muts and Ony) are assigned to three different rooms, one trainer, and one dog per room. The initial assignment is as follows:
Room 1: Latif and Lottie
Room 2: Mehak and Muts
Room 3: Osaf and Ony
The participants have learned five different commands, each of which they will execute as soon as the command is given.
Command A requires the trainer in Room 1 to move to Room 2, the trainer in Room 2 to move to Room 3, and the trainer in Room 3 to move to Room 1.
Command B requires the dogs in Room 1 and 2 to change places.
Command C requires the dogs in Room 2 and 3 to change places.
Command D requires the dogs in Room 3 and 1 to change places.
Command E requires each of the dogs to go to the room containing the trainer it was matched with in the initial assignment.

Q7. **If the participants in the initial assignment are given exactly one command, command A, which of the following will be true in the resulting arrangement?**
(A) Osaf and Muts will be in the same room.
(B) Mehak will be in room 3.
(C) Mehak and Lottie will be in the same room.
(D) Latif will be in Room 3.
(E) Latif and Ony will be in the same room.

Q8. **Which of the following commands or series of commands will yield a final arrangement in which Ony is in Room 2?**
(A) One call of A. (B) Two calls of B.
(C) Two calls of A followed by one call of E. (D) Two calls of A followed by one call of D.
(E) Two calls of B followed by one call of D.

Q9. **Which of the following sequences of commands will yield a final arrangement in which Osaf and Lottie are in Room 2?**
(A) B, C, A (B) B, A, A (C) D, A, E
(D) B, C, E, A (E) D, A, A, B

Q10. **Which of the following sequences of commands could result in a final arrangement in which Mehak and Ony are in Room 1, Osaf and Muts are in Room 2, and Latif and Lottie are in Room 3?**
(A) D, A, B (B) A, C, D (C) A, E, C, A
(D) A, D, A, B (E) B, D, A, A



Solution 1-6: For simplification, we write important points. These are:

1. There are six people who answer letters.
2. People are: A, B, C, D, E and F.
3. Each complaint letter received by the department is classified as either Red or Blue.
4. Red letters are given first A or B.
5. Blue letters are given first to anyone of the following:
   A, D or C

If the letter is forwarded, then the rules are given below:

6. By A to C if the letter is Red, but to D if the letter is Blue.
7. By B to either A or C.
8. By C to D if the letter is Red, but to E if the letter is Blue.
9. By D to either C or E whether the letter is Red or Blue.
10. By E to F whether the letter is Red or Blue.
11. F answers every letter given to him.

Q1. (D) The choice A is,

"A forwards a red letter to C"

According to point 4, Red letters are given first A or B, and according to point 6, the letter is forwarded if the letter is Red. So, this can be possible.

The choice B is,

"B forwards a red letter to A"

According to point 7, letter can be forwarded by B to either C or A, which is true.

The choice C is

"B forwards a red letter to C"

According to point 7, B can forwarded a red letter to C, hence choice C is true.

The choice D is,

"C forwards a red letter to E"

According to point 8, C can forwards a letter to E only if the letter is blue. So, C cannot forward a red letter to E.

Hence, best answer is choice D.

Q2. (C) The choice A is,

"A to B to E"

This sequence is not possible to deliver the letter. Because, according to point 6, the letter forwards by A to C if the letter is red, but to E if the letter is blue.

So this sequence is not acceptable.

The choice B is,

"A to C to D"

According to point 6, letter forwards A to C only if the letter is Red. Thus the given choice is not true. The choice C is,

"A to D to E"

According to point 6, letter can be forwarded from A to D if the letter is blue. So letter can be forwarded from A to D. Now, according to point 9, letter can be forwarded D to E whether the letter is Red or blue. So letter can be forwarded from A to D to E. Lastly, according to point 10, letter can be forwarded E to F whether the letter is Red or Blue. Therefore, the sequence given in choice C is true. Hence, best answer is choice C.

Q3. (E) Since, there are only two types of letters, Red or Blue. According to point 10, letter can be forwarded to F only from E. Hence, best answer is choice E.

Q4. (A) The choice A is,

"A red letter that is first given to B"

According to point 4, red letters are given first A or B. Here, letter is given first to A. Now, according to point 6, red letter will be forwarded to C, then according to point 8, red letter will be forward to D. The sequence look like as

$$A \longrightarrow C \longrightarrow D$$

Now, according to point 9, the letter will be forwarded to E. The root will look like as:

$$A \longrightarrow C \longrightarrow D \longrightarrow E$$

According to point 10, the letter will be transferred from E to F. Now the sequence is:

$$A \longrightarrow C \longrightarrow D \longrightarrow E \longrightarrow F$$

Lastly, since F answers every letter given to him so he will forward it to B.

$$A \longrightarrow C \longrightarrow D \longrightarrow E \longrightarrow F \longrightarrow B$$

Hence, best answer is choice A.

Q5. (B) The minimum root to reach F is

Take Red letter, if it is delivered to:

A: $A \longrightarrow C \longrightarrow D \longrightarrow E \longrightarrow F = 4$

B: $B \longrightarrow C \longrightarrow D \longrightarrow E \longrightarrow F = 4$

Take Blue letter, if it is delivered to:

A: $A \longrightarrow D \longrightarrow E \longrightarrow F = 3$

D: $D \longrightarrow E \longrightarrow F = 2$

C: $C \longrightarrow E \longrightarrow F = 2$

Hence, best answer is choice (B).

Q6. (C) From points 5, 9 and 10, clearly correct answer is choice C.

Solution 7-10: 1. Three trainers are:

(a) Latif (b) Mehak (c) Osaf

2. Three dogs are:

(a) Lottie (b) Muts (c) Ony

3. Trainers and dogs are assigned to three different rooms.
4. On dog and one trainers per room.
5. The initial assignment is as:
   a) Room 1: Latif and Lottie
   b) Room 2: Mehak and Muts
   c) Room 3: Osaf and Ony
6. Each participants have learned five different commands.
7. **Command A** requires the trainers in room 1 to move the Room 2, the trainer in Room 2 to move the Room 3, and the trainer in Room 3 to move Room 1.
8. **Command B** requires the dog in room 1 and 2 to change place.
9. **Command C** requires the dogs in room 2 and 3 to change places.
10. **Command D** requires the dogs in room 3 and 1 to change places.
11. **Command E** requires each of the dogs to go to the room containing the trainer it was matched with in the initial assignment.

Q7. (B) The initial assignment of the rooms are:

Room 1: Latif and Lottie Room 2: Mehak and Muts

Room 3: Osaf and Ony

When command A is executed:

Room 1: Osaf and Lottie Room 2: Latif and Muts

Room 3: Mehak and Ony

From above, we see that correct answer is choice B. Because Mehak will be in Room 3.

Q8. (C) The choice A is,

"one call of A"

After executing this command the arrangement will be as under:
Room 1: Osaf and Lottie Room 2: Latif and Muts
Room 3: Mehak and Ony
Since, Ony will not be in Room 2 after executing one call of A. So, this choice is rejected.
The choice B is

"Two calls of B"

After executing one call of B, the arrangement will be as under:
Room 1: Latif and Muts Room 2: Mehak and Lottie
Room 3: Osaf and Ony
After executing two call of B the arrangements will be as under:
Room 1: Latif and Lottie Room 2: Mehak and Muts
Room 3: Osaf and Ony
Since, Ony will be still in Room 3, so this choice is not accepted.
The choice C is

"Two calls of A followed by one call of E"

After executing two calls of A, the arrangements will be as under:
Room 1: Mehak and Lottie Room 2: Osaf and Muts
Room 3: Latif and Ony
After executing One call of E, the arrangements will be:
Room 1: Mehak and Muts Room 2: Osaf and Ony
Room 3: Latif and Lottie
Hence, best answer is choice C.

Q9. (B) The choice A is

"B, C, A"

After executing command B, the arrangements will be as under:
Room 1: Latif and Muts Room 2: Mehak and Lottie
Room 3: Osaf and Ony
After executing command C after B, the arrangements will be as under:
Room 1: Latif and Muts Room 2: Mehak and Ony
Room 3: Osaf and Lottie
After executing command A, the arrangements will be as under:
Room 1: Osaf and Muts Room 2: Latif and Ony
Room 3: Mehak and Lottie
From above, clearly Osaf and Lottie are not in Room 2, so this choice is not acceptable.
The choice B is,

"B A A"

After executing command B, the arrangements will be as follows:
Room 1: Latif and Muts Room 2: Mehak and Lottie
Room 3: Osaf and Ony
After executing command A, the above arrangements will be:
Room 1: Osaf and Muts Room 2: Latif and Lottie
Room 3: Mehak and Ony
At least executing command A again, we have the following final arrangements:
Room 1: Mehak and Muts Room 2: Osaf and Lottie
Room 3: Latif and Ony
From above, clearly, Osaf and Lottie are in Room 2. Hence, best answer is choice B.

Q10. (C) Using above patterns, it is clear that correct choice will be choice C.

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