

**APTITUDE  
TEST  
MADE EASY**

**GMAT**

# How to prepare for your Aptitude tests

Aptitude tests are used by employers to measure your work-related cognitive capacity. Aptitude tests are one of the most commonly used assessments in measuring candidates' suitability for a role. The most commonly used set of cognitive tests includes – abstract/conceptual reasoning, verbal reasoning and numerical reasoning.

## What are Aptitude tests?

Aptitude tests can typically be grouped according to the type of cognitive ability they measure:

### 1. Fluid Intelligence

Fluid intelligence is the ability to think and reason abstractly, effectively solve problems and think strategically. It's more commonly known as 'street smarts' or the ability to 'quickly think on your feet'. Examples of what employers can learn from your fluid intelligence about your suitability for the role you are applying:

- effective problem-solving skills
- ability to quickly learn new skills
- ability to quickly integrate new information
- strategic thinking
- ability to deal with ambiguity in decision making

Aptitude tests in this group include:

- Abstract or conceptual aptitude tests
- Diagrammatic reasoning tests
- Inductive reasoning tests
- Logical reasoning tests

What to expect in this type of aptitude test:

- Non-verbal test questions which must be completed in a predefined time.
- You typically have around 30 seconds to complete each test question.
- The time limit and the level of difficulty are defined in such a way that only 1-5% of the population can correctly solve all the test questions within the time frame provided.
- Each test question includes a scenario and multiple answer options. There is only one correct answer.
- To solve a test question you need to identify one or more logical rules and apply them to identify the next or the ‘odd-one-out’ shape.

### **How to prepare for your abstract aptitude test**

The abstract aptitude test is also called the conceptual reasoning test. It measures your lateral thinking, or fluid intelligence, which is your ability to quickly identify patterns, logical rules and trends in new data, integrate this information, and apply it to solve problems. It measures what most people would refer to as ‘street smarts’ and the ability to ‘think on your feet’. There are several types of abstract aptitude tests.

The most popular abstract test is called the Revan Test, where you are given a group or series of shapes that are defined by one or more logical rules. You are asked to identify the relevant logical rules and select the appropriate missing shape based on these rules.

The second type of abstract aptitude test includes two sets of shapes. Each set or series is defined by one or more logical rules. You are given a new shape and asked to decide whether it belongs to set A or set B, or neither.

A third type of abstract aptitude test includes a series of shapes that are defined by one or more logical rules. You are asked to identify the relevant logical rules and apply them to select the next shape in this series.

### **What do employers seek to learn from your abstract aptitude test score?**

The ability to quickly identify relationships, patterns and trends in organisational data – such as customers’ purchasing behaviour or market research – is crucial to your capacity to think strategically, grasp the bigger picture, and solve problems

quickly. Therefore, employers typically expect you to at least have reasonable abstract reasoning capabilities.

Employers use the result of your abstract reasoning test to learn the extent to which you are:

- capable of working with partial data
- capable of handling ambiguous situations at work
- able to efficiently learning new skills
- capable of thinking strategically when faced with problems in the relevant business field
- capable of quickly analysing new information, integrating it to the overall scheme of things, and applying it to solve work-related problems.

## **Diagrammatic Reasoning test guide**

Similar to logical reasoning, abstract reasoning and inductive reasoning tests, Diagrammatic reasoning tests are commonly used to assess candidates applying for a wide range of jobs such as marketing, investment banking, sales etc.

Diagrammatic reasoning tests present questions in the form of diagrams where a number of logical rules apply. Your task is to identify the underlying patterns and rules and use these to select the missing shape from the options provided.

The key to Diagrammatic reasoning tests is logical thinking, and although the level of difficulty and complexity of the diagrammatic reasoning test will vary based on the specific job requirements, it is based on the same ability type. For example, a candidate applying for a job with the police department would take a less complex diagrammatic reasoning test than a candidate applying for a job as a marketing manager.

The Institute of Psychometric Coaching provides the most detailed feedback reports available online. Each report contains a list of your correct and incorrect answers, detailed answer explanations and worked solutions to all questions to help you identify and strengthen areas in your logical thinking skills. These reports are

available to you immediately upon completing a Diagrammatic reasoning practice test and you can access them online at any time and track your outcome as you improve. We also offer recommendations on how to improve and perform at your best on the day of your Diagrammatic reasoning test.

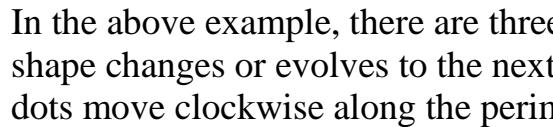
So if you are applying for a job, take the initiative and practice for this type of test, as preparation can make the difference between getting and not getting the job. Please try our free abstract test to test your logical thinking skills or purchase our online courses and practice abstract reasoning tests to ensure you get your dream job.

### **Inductive reasoning test guide**

Similar to abstract reasoning and diagrammatic aptitude tests, inductive reasoning aptitude tests measure your ability to work flexibly with unfamiliar information and solve problems. Each test question displays a series of shapes/objects. Your task is to identify the underlying logical rules of each series and use this information to select the missing shape from a number of options. Candidates who perform well on the inductive reasoning aptitude test tend to demonstrate a better capability for analytical and conceptual thinking.

### **Inductive reasoning aptitude test example question**

In an inductive reasoning test question, you are given a group or series of shapes that are related based on one or more logical rules. For example:



In the above example, there are three shapes that make a sequential series (i.e. one shape changes or evolves to the next one). The rule in this series is that the black dots move clockwise along the perimeter one place at a time.

### **How to prepare for your logical reasoning test**

Similar to deductive reasoning tests and verbal reasoning tests, logical reasoning aptitude tests are designed to measure your ability to draw logical conclusions based on statements or arguments, and to identify the strengths and weaknesses of those arguments.

## **Logical reasoning aptitude test example questions:**

### **Question example 1:**

Only fish oil contains Omega 3.

Only foods that contain Omega 3 help with brain development.

Which conclusion can be derived from the combination of these two statements?

1. All fish oils help with brain development.
2. Only what contains Omega 3 is fish oil.
3. All that helps with brain development is fish oil.
4. There are fish oils that help with brain development.

### **Answer explanation:**

Option 3 is the correct answer. From the first statement, we can conclude: fish oil => contains Omega 3. The second statement tells us: that which contains Omega 3 => helps with brain development. If we combine the two statements in reverse, we can see: helps with brain development => contains Omega 3 => fish oil. Thus, helps with brain development => fish oil.

### **Question example 2:**

To every question there is an answer.

From this statement, which of the following is not possible?

1. There is an answer that does not address any question.
2. If there is a question, then it has an answer.
3. Sam answered me, though I didn't ask a question.
4. The professor discussed questions that have no answer.

### **Answer explanation:**

Option 4 is the correct answer. If “every question has an answer”, then the statement “the professor discussed questions that have no answer” cannot be true. Therefore, answer D is not possible.

### **What to expect in your logical reasoning aptitude test:**

- Logical reasoning aptitude tests are timed. You should allow around 30 seconds for each test question. To master your logical aptitude test, you must be familiar with all the ins and outs of your spatial aptitude test.
- Typically, you will have easier test questions at the beginning. The level of difficulty of the questions will increase as the test progresses.
- There is only one correct answer.

It is extremely important to ensure that you practise the right test questions for your spatial aptitude test. As there are several types of spatial aptitude test questions, each designed to match a different level of difficulty and complexity, the right test questions are necessary for an effective practice. Don’t practise the generic spatial tests that are offered free on many websites, as they are likely to waste your time.

Improving your test score on the spatial aptitude test can be achieved through ensuring simple factors, such as using the right techniques and frameworks to solve test problems.

### **How to prepare you for your logical aptitude test:**

The Institute of Psychometric Coaching (IPC) offers online preparation developed by experienced psychologists. These psychologists have developed aptitude tests and administered them to candidates applying for jobs with many local and international companies. Our preparation solutions are quick, effective, affordable, and tailored to the level of difficulty and complexity of the position you are applying for.

## **2. Crystallized Intelligence**

Crystallised intelligence is the ability to learn from past experiences and to apply this learning to work-related situations. Work situations that require crystallised intelligence include producing and analysing written reports, comprehending work instructions, using numbers as a tool to make effective decisions, etc.

Aptitude tests in this group include:

- Verbal aptitude tests
- Numerical aptitude tests
- Spatial aptitude tests
- Mechanical reasoning tests

### **What to expect in this type of aptitude test:**

- A set of verbal or numerical problems which must be completed in a predefined time.
- The time limit is defined in such a way that only 1-5% of the population can correctly solve all the test questions within the time frame provided.
- Each test question has only one correct answer.
- Test questions offer you written information such as statements, tables or graphs. Your task is to quickly analyse the given data and make correct business decisions.

### **How to prepare for your verbal aptitude test**

The verbal aptitude test is one of the most commonly used psychometric (or aptitude) tests to measure a candidate's suitability and potential. There are several types of verbal reasoning tests:

- The basic (and also the easier) verbal aptitude test asks you to identify word analogies, complete sentences, or identify word synonyms/antonyms. It measures your ability to use the English language in the workplace – i.e. to communicate or understand information.

- The more complex verbal aptitude test asks you to make logical decisions based on one or more statements. This type of verbal aptitude test measures your ability to process information quickly and draw accurate conclusions in a logical manner.
- The most complex and difficult verbal reasoning test asks you to make a decision about a statement based on a written passage. This verbal aptitude test type measures your ability to efficiently identify critical issues from written material, convey information to others in a clear and simple manner, think logically, and produce effective reports.

### **What employers seek to learn from your verbal reasoning score**

The result of your verbal aptitude test assists employers to discover the extent to which you can:

- identify critical business-related issues and logically draw conclusions from business-related reading material, such as company manuals and reports.
- produce clearly written organisational reports and documents.
- articulate business-related issues in a clear and simple manner to colleagues, managers and customers.

### **What to expect in your numerical aptitude test**

The numerical aptitude test measures your ability to interpret, analyse, and draw logical conclusions based on numerical data. There are several types of numerical aptitude test questions. Each is of a different level of difficulty and complexity:

- The easier numerical aptitude test questions typically include simple word problems requiring you to calculate percentages or other basic arithmetical calculations and number series (single number series or Sudoku-based number series). This type of question measures your ability to work with numbers and use numerical data as a tool to make reasoned decisions and solve problems.
- The more complex and difficult numerical aptitude test questions are frequently used to assess graduates and candidates applying for professional and managerial roles. This type of question includes more complex information presented in graphs or tables and measures your ability to efficiently process

numerical information in a logical manner, identify critical pieces of information, filter out irrelevant information, draw accurate conclusions, and solve problems.

### **What do employers seek to learn from your numerical test score?**

Numerical data generated by organisational systems, or communicated by key stakeholders, are a crucial information sources to drive results, monitor progress, and achieve business goals. Hence, employers expect you to be capable of effectively collecting, interpreting, analysing, and presenting numerical data.

Employers use the results of your numerical aptitude test to learn the extent to which you are:

- capable of efficiently and effectively identifying critical business-related issues, and logically drawing conclusions from numerical data, such as performance figures, financial results and analysis reports;
- capable of efficiently monitoring performance and progress based on numerical metrics, such as charts and tables;
- capable of clearly presenting and conveying business-related issues to work colleagues and managers.

### **What to expect in your mechanical reasoning test**

Mechanical aptitude tests, or mechanical reasoning tests, are commonly administered for technical and engineering positions. The mechanical aptitude test measures your ability to understand and apply mechanical concepts and principles to solve problems.

Are you likely to need to take a mechanical aptitude test?

Candidates applying for technical and mechanical roles are likely to be asked to complete a mechanical reasoning test. Positions for which a mechanical reasoning test is common include: fire brigade (CFA, MFB), train drivers, trades people, operation and assembly-line workers. The level of difficulty and complexity of the test questions varies according to the required skills.

### **What to expect in your mechanical aptitude test?**

- A mechanical aptitude test includes a set of mechanical problems that must be completed in a predefined time.
- The time limit is designed so that only 1% to 5% of the population can correctly solve all the test questions within the allowed timeframe.
- Each test question has only one correct answer.
- Each test question offers you a mechanical scenario that might include acceleration, gravity, friction, pressure, moments, energy transformation, kinetic and potential energy, work and power, levers, pulleys, screws, gears, springs, etc.
- You should expect to have around 30 seconds to complete each test question.
- The level of complexity and difficulty of test questions depends on the position you are applying for. As an example, the test questions for candidates applying for managerial roles will be at a higher level of difficulty and complexity than those for candidates applying for entry-level roles.

Improving your test score on the mechanical aptitude test can be achieved through developing simple factors to solve test problems, such as the right techniques and frameworks.

### **How we prepare you for your mechanical aptitude test**

IPC's online practice mechanical reasoning aptitude tests:

- The largest pool of mechanical aptitude test questions.
- All test questions and answers are developed by experienced psychometric test writers.
- Immediate full test reports that include your total score, a list of your correct and incorrect answers, and detailed explanations of answers. This ensures you quickly recognise your strengths and the areas that need improvement.
- Immediate and practical recommendations on how to improve your outcome.
- Effective solutions to train your mind to quickly recognise patterns and correctly solve problems.

# Verbal Ability :: Comprehension

**TIME:50 MINUTES**

**Direction:** In this section, you will read several passages . Each passage is followed by questions about it. Choose the one best answer{ A, B, C, D } for each question.

I felt the wall of the tunnel shiver. The master alarm squealed through my earphones. Almost simultaneously, Jack yelled down to me that there was a warning light on. Fleeting but spectacular sights snapped into view, the snow, the shower of debris, the moon, looming close and big, the dazzling sunshine for once unfiltered by layers of air. The last twelve hours before re-entry were particular bone-chilling. During this period, I had to go up in to command module. Even after the fiery re-entry splashing down in 81o water in south pacific, we could still see our frosty breath inside the command module.

1. The word 'Command Module' used twice in the given passage indicates perhaps that it deals with
  - A. an alarming journey
  - B. a commanding situation
  - C. a journey into outer space
  - D. a frightful battle.
  
2. Which one of the following reasons would one consider as more as possible for the warning lights to be on?
  - A. There was a shower of debris.
  - B. Jack was yelling.
  - C. A catastrophe was imminent.
  - D. The moon was looming close and big.

3. The statement that the dazzling sunshine was "for once unfiltered by layers of air" means

- A. that the sun was very hot
- B. that there was no strong wind
- C. that the air was unpolluted
- D. none of above

But I did not want to shoot the elephant. I watched him beating his bunch of grass against his knees, with the preoccupied grandmotherly air that elephants have. It seemed to me that it would be murder to shoot him. I had never shot an elephant and never wanted to. (Somehow it always seems worse to kill large animal.) Besides, there was the beast's owner to be considered. But I had got to act quickly. I turned to some experienced-looking Burmans who had been there when we arrived, and asked them how the elephants had been behaving. They all said the same thing; he took no notice of you if you left him alone, but he might charge if you went too close to him.

4. The phrase 'Preoccupied grandmotherly air' signifies

- A. being totally unconcerned
- B. pretending to be very busy
- C. a very superior attitude
- D. calm, dignified and affectionate disposition

5. From the passage it appears that the author was

- A. an inexperienced hunter
- B. kind and considerate
- C. possessed with fear

- D. a worried man
6. The author did not want to shoot the elephant because he
- A. was afraid of it
  - B. did not have the experience of shooting big animals
  - C. did not wish to kill animal which was not doing anybody any harm
  - D. did not find the elephant to be ferocious
- Harold a professional man who had worked in an office for many years had a fearful dream. In it, he found himself in a land where small slug-like animals with slimy tentacles lived on people's bodies. The people tolerated the loathsome creatures because after many years they grew into elephants which then became the nation's system of transport, carrying everyone wherever he wanted to go. Harold suddenly realised that he himself was covered with these things, and he woke up screaming. In a vivid sequence of pictures this dream dramatised for Harold what he had never been able to put in to words; he saw himself as letting society feed on his body in his early years so that it would carry him when he retired. He later threw off the "security bug" and took up freelance work.\
7. In his dream Harold found the loathsome creatures
- A. in his village
  - B. in his own house
  - C. in a different land
  - D. in his office
8. Which one of the following phrases best helps to bring out the precise meaning of 'loathsome creatures'?
- A. Security bug and slimy tentacles

B. Fearful dream and slug-like animals

C. Slimy tentacles and slug-like animals

D. slug-like animals and security bug

9. The statement that 'he later threw off the security bug' means that

A. Harold succeeded in overcoming the need for security

B. Harold stopped giving much importance to dreams

C. Harold started tolerating social victimisation

D. Harold killed all the bugs troubled him

10. Harold's dream was fearful because

A. it brought him face to face with reality

B. it was full of vivid pictures of snakes

C. he saw huge elephant in it

D. in it he saw slimy creatures feeding on people's bodies

Laws of nature are not commands but statements of acts. The use of the word "law" in this context is rather unfortunate. It would be better to speak of uniformities in nature. This would do away with the elementary fallacy that a law implies a law giver. If a piece of matter does not obey a law of nature it is punished. On the contrary, we say that the law has been incorrectly started.

11. If a piece of matter violates nature's law, it is not punished because

- A. it is not binding to obey it
- B. there is no superior being to enforce the law of nature
- C. it cannot be punished
- D. it simply means that the facts have not been correctly stated by law

12. Laws of nature differ from man-made laws because

- A. the former state facts of Nature
- B. they must be obeyed
- C. they are natural
- D. unlike human laws, they are systematic

13 The laws of nature based on observation are

- A. conclusion about the nature of the universe.
- B. true and unfalsifiable.
- C. figments of the observer imagination.
- D. subject to change in the light of new facts.

14. The author is not happy with word 'law' because

- A.it connotes rigidity and harshness
- B. it implies an agency which has made them
- C. it does not convey the sense of nature's uniformity

D. it gives rise to false beliefs

Male lions are rather reticent about expanding their energy in hunting more than three quarters of kills are made by lionesses are in front, tensely scanning ahead, the cubs lag playfully behind and the males bring up the rear, walking slowly, their massive heads nodding with each step as if they were bored with the whole matter. But slothfulness may have survival value. With lionesses busy hunting, the males function as guard for the cubs, protecting them particularly from hyenas.

15. According to the passage male lions generally do not go for huntins because

A .they don not like it.

B. they want lioness to get training

C .they wish to save their vigour for other things

D. they are very lazy

16. Male lions protect their cubs

A. from the members of their own species

B. from hyenas only

C. from hyenas as much as from other enemies

D. more from hyenas than from other animals

17. Lioness go for hunting

A. all alone

B. with their male partners only

C. with their cubs and male partners

D. with their cubs only

18. When the lionesses go in search for their prey, they are very

A. serious

B. cautious

C. playful

D. sluggish

At this stage of civilisation, when many nations are brought in to close and vital contact for good and evil, it is essential, as never before, that their gross ignorance of one another should be diminished, that they should begin to understand a little of one another's historical experience and resulting mentality. It is the fault of the English to expect the people of other countries to react as they do, to political and international situations. Our genuine goodwill and good intentions are often brought to nothing, because we expect other people to be like us. This would be corrected if we knew the history, not necessarily in detail but in broad outlines, of the social and political conditions which have given to each nation its present character.

19. According to the author of 'Mentality' of a nation is mainly product of its

A. history

B. international position

C. politics

D. present character

20. The need for a greater understanding between nations

A. was always there

B. is no longer there

C. is more today than ever before

D. will always be there

21. The character of a nation is the result of its

- A. mentality
- B. cultural heritage
- C. gross ignorance
- D. socio-political conditions

22. According to the author his countrymen should

- A. read the story of other nations
- B. have a better understanding of other nations
- C. not react to other actions
- D. have vital contacts with other nations

23. Englishmen like others to react to political situations like

- A.us
- B. themselves
- C. others
- D. each others

What needs to be set right is our approach to work. It is a common sight in our country of employees reporting for duty on time and at the same time doing little work. If an assessment is made of time they spent in gossiping, drinking tea, eating "pan" and smoking cigarettes, it will be shocking to know that the time devoted to actual work is negligible. The problem is the standard which the leadership in administration sets for the staff. Forget the ministers because they mix politics and administration. What do top bureaucrats do? What do the below down officials do? The administration set up remains weak mainly because the employees do not have the right example to follow and they are more concerned about being in the good books of the bosses than doing work.

24. The employees in our country

- A. are quite punctual but not duty conscious
- B. are not punctual, but somehow manage to complete their work
- C. are somewhat lazy but good natured
- D. are not very highly qualified

25 According to the writer, the administration in India

- A. is by and large effective
- B. is very strict and firm
- C. is affected by red tape
- D. is more or less ineffective

26, The word 'assessment' means

- A. enquiry
- B. report
- C. evaluation
- D. summary

27. The leadership in administration

- A. sets a fine example to the employees
- B. is of a reasonably high standard
- C. is composed of idealists
- D. is of a very poor standard

28. The central idea of passage could be best expressed by the following

- A. The employee outlook towards work is justified
- B. The employee must change their outlook towards work
- C. The employees would never change their work culture
- D. The employer-employee relationship is far from healthy

Speech is great blessings but it can also be great curse, for while it helps us to make our intentions and desires known to our fellows, it can also if we use it carelessly, make our attitude completely misunderstood. A slip of the tongue, the use of unusual word, or of an ambiguous word, and so on, may create an enemy where we had hoped to win a friend. Again, different classes of people use different vocabularies, and the ordinary speech of an educated may strike an uneducated listener as pompous. Unwittingly, we may use a word which bears a different meaning to our listener from what it does to men of our own class. Thus speech is not a gift to use lightly without thought, but one which demands careful handling. Only a fool will express himself alike to all kinds and conditions to men.

29. The best way to win a friend is to avoid

- A. irony in speech
- B. pomposity in speech
- C. verbosity in speech
- D. ambiguity in speech

30. While talking to an uneducated person, we should use

- A. ordinary speech
- B. his vocabulary
- C. simple words
- D. polite language

31. If one used the same style of language with everyone, one would sound

- A. flat
- B. boring
- C. foolish
- D. democratic

32. A 'slip of the tongue' means something said

- A. wrongly by choice
- B. unintentionally
- C. without giving proper thought
- D. to hurt another person

33. Speech can be curse, because it can

- A. hurt others
- B. lead to carelessness
- C. create misunderstanding
- D. reveal our intentions

Mahatma Gandhi believed that industrialisation was no answer to the problems that plague the mass of India's poor and that villagers should be taught to be self-sufficient in food, weave their own cloth from cotton and eschew the glittering prizes that the 20th century so temptingly offers. Such an idyllic and rural paradise did not appear to those who inherited the reins of political power.

34 The meaning of 'glittering prizes that the 20th century so temptingly offers is

- A. pursuit of a commercialised material culture
- B. replacement of rural by urban interests

C. complete removal of poverty

D. absence of violence and corruption

35. The basis of 'an idyllic and rural paradise' is

A. rapid industrialisation of villages

B. self sufficiency in food clothes and simplicity of the lifestyle

C. bringing to the villages the glittering prizes of the 20th century

D. supporting those holdings powerful political positions

36. Which one of the following best illustrates the relationship between the phrases:

(i) 'eschew the glittering prizes' and

(ii) 'idyllic and rural paradise'?

A. unless you do (i), you cannot have (ii)

SB. (i) and (ii) are identical in meaning

C. first of all you must have (ii) in order to do (i)

D. the meaning of (i) is directly opposite to (ii)

37, Mahatma Gandhi's views opposed industrialisation of villages because

A. it would help the poor and not the rich

B. it would take away the skill of the villagers

C. it would affect the culture of the Indians

D. it would undermine self-sufficiency and destroy the beauty of life of the villager

38. Mahatma Gandhi's dream of 'an idyllic and rural paradise' was not shared by

- A.those who did not believe in the industrialization of the country
- B. those who called him the Father of Nation
- C. those who inherited political powers after independence
- D. those who believed that villages should be self-sufficient in food and cloth

Organisations are institutions in which members compete for status and power. They compete for resource of the organisation, for example finance to expand their own departments, for career advancement and for power to control the activities of others. In pursuit of these aims, grouped are formed and sectional interests emerge. As a result, policy decisions may serve the ends of political and career systems rather than those of the concern. In this way, the goals of the organisation may be displaced in favour of sectional interests and individual ambition. These preoccupations sometimes prevent the emergence of organic systems. Many of the electronic firms in the study had recently created research and development departments employing highly qualified and well paid scientists and technicians. Their high pay and expert knowledge were sometimes seen as a threat to the established order of rank, power and privilege. Many senior managers had little knowledge of technicality and possibilities of new developments and electronics. Some felt that close cooperation with the experts in an organic system would reveal their ignorance and show their experience was now redundant.

39. The theme of the passage is
- A. groupism in organizations
  - B. individual ambitions in organizations
  - C. frustration of senior managers
  - D. emergence of sectional interests in organizations

40. "Organic system" as related to the organization implies its
- A. growth with the help of expert knowledge

- B. growth with input from science and technology
- C. steady all around development
- D. natural and unimpeded growth

41. Policy decision in organization would involve

- A .cooperation at all levels in the organization
- B. modernization of the organization
- C. attracting highly qualified personnel
- D keeping in view the larger objectives of the organizations

42. The author makes out a case for

- A .organic system
- B. Research and Development in organisations
- C. an understanding between senior and middle level executives
- D. a refresher course for senior managers

43. The author tends to the senior managers as

- A. ignorant and incompetent
- B. a little out of step with their work environment
- C. jealous of their younger colleagues
- D. robbed of their rank, power and privilege

Corduroy is fast establishing itself at this year's fabric, While the ribbed cotton itself provides utilitarian tenacity, texture and warmth. it is the fabric's long held

associations may provide a hint to its current revival as a fabric for all seasons.

It is Corduroy's link with the good breeding and country living that made it an essential ingredient in the gentleman's wardrobe along with Wellington boots and decent wooly. I combines the comfortable nonsense appeal of cotton with the perfectly correct luxury finish of velvet. Corduroy has the ability to appear either supremely sophisticated or rough and ready.

44. Which one of the following best describes the passage?

- A. It tell us about the usefulness of corduroy
- B. It talks us about the virtues of corduroy
- C. It persuades us to buy corduroy
- D. It makes as understand the everlasting appeal of corduroy to the young

45. According to the author, the special quality of corduroy is that

- A. it needs no ironing
- B. it combines the virtues of both cotton and velvet
- C. it contains the correct mixture of cotton and velvet
- D. both the rich and that not-so rich can afford to buy it

46. Corduroy is a fabric for all seasons because

- A. it can be worn not only in winter but also in summer
- B. of its peculiar texture and warmth
- C. it is made popular by catchy advertisements
- D. gentleman can wear it in both formal and informal occasions

47. According to the passage, corduroy is essential in a gentleman wardrobe because

- A. it goes with Wellington boots
- B. its current revival gives a taste of the latest fashion
- C. it has its associations with good upbringing and a conservative lifestyle
- D. it can be an idea alternative to the woollen clothes

48. When the writer refers to corduroy's 'utilitarian tenacity' he means that

- A. though expensive, it is economic in the long run
- B. it is useful because it is durable
- C. it has remained fashionable over several years
- D. it does not need frequent washing

The enjoyment of physical possession of things would seem to be one of the prerogatives of wealth which has been little impaired. Presumably nothing has happened to keep the man who can afford them from enjoying his Rembrandt and his homegrown orchids. But enjoyment of things has always been associated with the third prerogative of wealth which is the distinction it confers. In a world where nearly everyone was poor, the distinction was very great. It was the natural consequence of rarity. In England it is widely agreed, the ducal families are not uniformly superior. There is a roughly normal incidence of intelligence and stupidity, good taste and bad taste, morality, immorality. But very few people are dukes and duchesses, although the latter have become rather more frequent with modern easing of divorce laws. As a result, even though they may be intrinsically unexceptional they are regarded with some awe. So it has long been with the rich. Were dukes numerous their position would deteriorate. As the rich have become more numerous, they have inevitably become a debased currency.

49. The distinction conferred by wealth

- A. was unfair to the poor
- B. was unlikely to spread throughout the world
- C. was very great when there were many rich people
- D. was very great when there were few rich people

50. The enjoyment of the physical possession of things

- A. is one of the privileges of wealth which has not been changed
- B. is one of the privileges of wealth which should be curtailed
- C. has little to do with the prerogatives of wealth
- D. is a prerogative of wealth which cannot be disputed

# ANSWERS

1, C 2, C 3, D4, D5, Answer: Option B 6, Answer: Option B

7, Answer: Option C 8, Answer: Option C 9, Answer: Option A

10, Answer: Option A 11, Answer: Option B 12, Answer: Option A

13, Answer: Option D 14, Answer: Option A

15, Answer: Option C 16, Answer: Option D 17, Answer: Option C

18, Answer: Option B 19, Answer: Option A 20, Answer: Option C

21, Answer: Option D 22, Answer: Option B 23, Answer: Option B

25, Answer: Option A 26, Answer: Option D 27, Answer: Option C

28, Answer: Option D 29, Answer: Option B 30, Answer: Option D

31, Answer: Option B 32, Answer: Option C 33, Answer: Option C

34, Answer: Option C 35, Answer: Option B. 36, Answer: Option D

37, Answer: Option B 38, Answer: Option A 39, Answer: Option D

40, Answer: Option B 41, Answer: Option C 43, Answer: Option A

44, Answer: Option B 45, Answer: Option D 46, Answer: Option A

47, Answer: Option C 48, Answer: Option B 49, Answer: Option D

50, Answer: Option D

## Verbal Reasoning:: Arithmetic Reasoning Test 1

TIME: 55 MINUTES

1. The total of the ages of Amar, Akbar and Anthony is 80 years. What was the total of their ages three years ago ?
  - A. 71 years
  - B. 72 years
  - C. 74 years
  - D. 77 years
2. Two bus tickets from city A to B and three tickets from city A to C cost Rs. 77 but three tickets from city A to B and two tickets from city A to C cost Rs. 73. What are the fares for cities B and C from A ?
  - A. Rs. 4, Rs. 23
  - B. Rs. 13, Rs. 17
  - C. Rs. 15, Rs. 14
  - D. Rs. 17, Rs. 13
3. An institute organised a fete and  $\frac{1}{5}$  of the girls and  $\frac{1}{8}$  of the boys participated in the same. What fraction of the total number of students took part in the fete ?
  - A.  $\frac{2}{13}$
  - B.  $\frac{13}{40}$
  - C. Data inadequate
  - D. None of these

4. A number of friends decided to go on a picnic and planned to spend Rs. 96 on eatables. Four of them, however, did not turn up. As a consequence, the remaining ones had to contribute Rs. 4 each extra. The number of those who attended the picnic was
- A. 8                              B. 12  
C. 16                              D. 24
5. A, B, C, D and E play a game of cards. A says to B, "If you give me three cards, you will have as many as E has and if I give you three cards, you will have as many as D has." A and B together have 10 cards more than what D and E together have. If B has two cards more than what C has and the total number of cards be 133, how many cards does B have ?
- A. 22                              B. 23  
C. 25                              D. 35
6. A pineapple costs Rs. 7 each. A watermelon costs Rs. 5 each. X spends Rs. 38 on these fruits. The number of pineapples purchased is
- A. 2  
B. 3  
C. 4  
D. Data inadequate
7. A woman says, "If you reverse my own age, the figures represent my husband's age. He is, of course, senior to me and the difference between our ages is one-eleventh of their sum." The woman's age is
- A. 23 years  
B. 34 years  
C. 45 years  
D. None of these

8. A girl counted in the following way on the fingers of her left hand : She started by calling the thumb 1, the index finger 2, middle finger 3, ring finger 4, little finger 5 and then reversed direction calling the ring finger 6, middle finger 7 and so on. She counted upto 1994. She ended counting on which finger ?
- A. Thumb  
B. Index finger  
C. Middle finger  
D. Ring finger
9. A man has Rs. 480 in the denominations of one-rupee notes, five-rupee notes and ten-rupee notes. The number of notes of each denomination is equal. What is the total number of notes that he has ?
- A. 45                                  B. 60  
C. 75                                  D. 90
10. What is the product of all the numbers in the dial of a telephone ?
- A. 1,58,480  
B. 1,59,450  
C. 1,59,480  
D. None of these
11. A is 3 years older to B and 3 years younger to C, while B and D are twins. How many years older is C to D?
- A. 2                                    B. 3  
C. 6                                    D. 12

12. The 30 members of a club decided to play a badminton singles tournament. Every time a member loses a game he is out of the tournament. There are no ties. What is the minimum number of matches that must be played to determine the winner ?

- A. 15
- B. 29
- C. 61
- D. None of these

13. In a garden, there are 10 rows and 12 columns of mango trees. The distance between the two trees is 2 metres and a distance of one metre is left from all sides of the boundary of the garden. The length of the garden is

- A. 20 m
- B. 22 m
- C. 24 m
- D. 26 m

14. 12 year old Manick is three times as old as his brother Rahul. How old will Manick be when he is twice as old as Rahul ?

- A. 14 years
- B. 16 years
- C. 18 years
- D. 20 years

15. A tailor had a number of shirt pieces to cut from a roll of fabric. He cut each roll of equal length into 10 pieces. He cut at the rate of 45 cuts a

minute. How many rolls would be cut in 24 minutes ?

- A. 32 rolls
- B. 54 rolls
- C. 108 rolls
- D. 120 rolls

16. In a class of 60 students, the number of boys and girls participating in the annual sports is in the ratio 3 : 2 respectively. The number of girls not participating in the sports is 5 more than the number of boys not participating in the sports. If the number of boys participating in the sports is 15, then how many girls are there in the class ?

- A. 20
- B. 25
- C. 30
- D. Data inadequate
- E. None of these

17. There are deer and peacocks in a zoo. By counting heads they are 80. The number of their legs is 200. How many peacocks are there ?

- A. 20
- B. 30
- C. 50
- D. 60

18. A man wears socks of two colours - Black and brown. He has altogether 20 black socks and 20 brown socks in a drawer. Supposing he has to take out the socks in the dark, how many must he take out to be sure that he has a matching pair ?

- A.** 3
- B.** 20
- C.** 39
- D.** None of these

19. A motorist knows four different routes from Bristol to Birmingham. From Birmingham to Sheffield he knows three different routes and from Sheffield to Carlisle he knows two different routes. How many routes does he know from Bristol to Carlisle ?

- A.** 4
- B.** 8
- C.** 12
- D.** 24

20. Mac has £ 3 more than Ken, but then Ken wins on the horses and trebles his money, so that he now has £ 2 more than the original amount of money that the two boys had between them. How much money did Mac and Ken have between them before Ken's win ?

- A.** £ 9
- B.** £ 11
- C.** £ 13
- D.** £ 15

21. In a class, there are 18 boys who are over 160 cm tall. If these constitute three-fourths of the boys and the total number of boys is two-thirds of the total number of students in the class, what is the number of girls in the class ?

- A.** 6
- B.** 12

**C.** 18

**D.** 24

22. A father is now three times as old as his son. Five years back, he was four times as old as his son. The age of the son (in years) is

**A.** 12

**B.** 15

**C.** 18

**D.** 20

23. A waiter's salary consists of his salary and tips. During one week his tips were  $\frac{5}{4}$  of his salary. What fraction of his income came from tips ?

**A.**  $\frac{4}{9}$

**B.**  $\frac{5}{4}$

**C.**  $\frac{5}{8}$

**D.**  $\frac{5}{9}$

24. If you write down all the numbers from 1 to 100, then how many times do you write 3 ?

**A.** 11

**B.** 18

**C.** 20

**D.** 21

25. If 100 cats kill 100 mice in 100 days, then 4 cats would kill 4 mice in how many days ?

**A.** 1 day

**B.** 4 days

**C.** 40 days

**D.** 100 days

26. Five bells begin to toll together and toll respectively at intervals of 6, 5,

7, 10 and 12 seconds. How many times will they toll together in one hour excluding the one at the start ?

- A. 7 times
- B. 8 times
- C. 9 times
- D. 11 times

27. A bus starts from city X. The number of women in the bus is half of the number of men. In city Y, 10 men leave the bus and five women enter. Now, number of men and women is equal. In the beginning, how many passengers entered the bus ?

- A. 15
  - B. 30
  - C. 36
  - D. 45
28. A, B, C, D and E play a game of cards. A says to B, "If you give me 3 cards, you will have as many as I have at this moment while if D takes 5 cards from you, he will have as many as E has." A and C together have twice as many cards as E has. B and D together also have the same number of cards as A and C taken together. If together they have 150 cards, how many cards has C got ?
- A. 28
  - B. 29
  - C. 31
  - D. 35

29. A farmer built a fence around his square plot. He used 27 fence poles on each side of the square. How many poles did he need altogether ?

- A. 100
- B. 104
- C. 108
- D. None of these

3 In a city, 40% of the adults are illiterate while 85% of the children are literate. If the ratio of the adults to that of the children is 2 : 3, then what percent of the population is literate ?

- A. 20%
- B. 25%
- C. 50%
- D. 75%

31. A is three times as old as B. C was twice-as old as A four years ago. In four years' time, A will be 31. What are the present ages of B and C ?

- A. 9, 46
- B. 9, 50
- C. 10, 46
- D. 10, 50

32. Today is Varun's birthday. One year, from today he will be twice as old as he was 12 years ago. How old is Varun today ?

- A. 20 years
- B. 22 years
- C. 25 years
- D. 27 years

33. A bird shooter was asked how many birds he had in the bag. He replied that there were all sparrows but six, all pigeons but six, and all ducks but six. How many birds he had in the bag in all?

- A. 9
- B. 18
- C. 27
- D. 36

34. Mr. Johnson was to earn £ 300 and a free holiday for seven weeks' work. He worked for only 4 weeks and earned £ 30 and a free holiday. What was the value of the holiday?

A. £ 300

B. £ 330

C. £ 360

D. £ 420

35. What is the smallest number of ducks that could swim in this formation - two ducks in front of a duck, two ducks behind a duck and a duck between two ducks ?

A. 3

B. 5

C. 7

D. 9

36. Three friends had dinner at a restaurant. When the bill was received, Amita paid  $\frac{2}{3}$  as much as Veena paid and Veena paid  $\frac{1}{2}$  as much as Tanya paid. What fraction of the bill did Veena pay ?

A.  $\frac{1}{3}$

B.  $\frac{3}{11}$

C.  $\frac{12}{13}$

D.  $\frac{5}{8}$

37, In a class, 20% of the members own only two cars each, 40% of the re own only one car each. Which of the following statements is definitely true

A. Only 20% of the total members own three cars each.

B. 48% of the total members own only one car each.

C. 60% of the total members own at least two cars each.

D. 80% of the total members own at least one car.

**E.** None of these

38. When Rahul was born, his father was 32 years older than his brother and his mother was 25 years older than his sister. If Rahul's brother is 6 years older than him and his mother is 3 years younger than his father, how old was Rahul's sister when he was born ?

- A.** 7 years
- B.** 10 years
- C.** 14 years
- D.** 19 years

39. A certain number of horses and an equal number of men are going somewhere. Half of the owners are on their horses' back while the remaining ones are walking along leading their horses. If the number of legs walking on the ground is 70, how many horses are there ?

- A.** 10
- B.** 12
- C.** 14
- D.** 16

40. Ravi's brother is 3 years senior to him. His father was 28 years of age when his sister was born while his mother was 26 years of age when he was born. If his sister was 4 years of age when his brother was born, what were the ages of Ravi's father and mother respectively when his brother was born ?

- A.** 32 years, 23 years
- B.** 32 years, 29 years
- C.** 35 years, 29 years
- D.** 35 years, 33 years

41. The number of boys in a class is three times the number of girls.

Which one of the following numbers cannot represent the total number of children in the class ?

A. 48

B. 44

C. 42

D. 40

42. A shepherd had 17 sheep. All but nine died. How many was he left with ?

A. Nil

B. 8

C. 9

D. 17

43. In a family, the father took  $\frac{1}{4}$  of the cake and he had 3 times as much as each of the other members had. The total number of family members is

A. 3

B. 7

C. 10

D. 12

44. In three coloured boxes - Red, Green and Blue, 108 balls are placed. There are twice as many balls in the green and red boxes combined as there are in the blue box and twice as many in the blue box as there are in the red box. How many balls are there in the green box ?

A. 18

B. 36

C. 45

D. None of these

45. In a cricket match, five batsmen A, B, C, D and E scored an average of 36 runs. D Scored 5 more than E; E scored 8 fewer than A; B scored as many as D and E combined; and B and C scored 107 between

them. How many runs did E score ?

- A. 62
- B. 45
- C. 28
- D. 20

46. The total number of digits used in numbering the pages of a book having 366 pages is

- A. 732
- B. 990
- C. 1098
- D. 1305

47. In a family, each daughter has the same number of brothers as she has sisters and each son has twice as many sisters as he has brothers. How many sons are there in the family ?

- A. 2
- B. 3
- C. 4
- D. 5

48. At a dinner party every two guests used a bowl of rice between them, every three guests used a bowl of dal between them and every four used a bowl of meat between them. There were altogether 65 dishes. How many guests were present at the party ?

- A. 60
- B. 65
- C. 90
- D. None of these

49. Ayush was born two years after his father's marriage. His mother is five years younger than his father but 20 years older than Ayush who is 10 years old. At what age did the father get married ?

- A. 23 years

**B.** 25 years

**C.** 33 years

**D.** 35 years

50, On Children's Day, sweets were to be equally distributed among 175 children in a school. Actually on the Children's Day, 35 children were absent and therefore each child got 4 sweets extra. Total how many sweets were available for distribution ?

**A.** 2400

**B.** 2480

**C.** 2680

**D.** 2800

# Answer & Explanation

1, Answer: Option A

Explanation:

Required sum =  $(80 - 3 \times 3)$  years =  $(80 - 9)$  years = 71 years.

2, Answer: Option B

Explanation:

Let Rs.  $x$  be the fare of city B from city A and Rs.  $y$  be the fare of city C from city A.

Then,  $2x + 3y = 77$  ...(i) and

$3x + 2y = 73$  ...(ii)

Multiplying (i) by 3 and (ii) by 2 and subtracting, we get:  $5y = 85$  or  $y = 17$ .

Putting  $y = 17$  in (i), we get:  $x = 13$ .

3, Answer: Option C

4, Answer: Option A

Explanation:

Let the number of persons be  $x$ . Then,

$$\begin{aligned}\frac{96}{x-4} - \frac{96}{x} &= 4 \Leftrightarrow \frac{1}{x-4} - \frac{1}{x} = \frac{4}{96} \Leftrightarrow \frac{x-(x-4)}{x(x-4)} = \frac{1}{24} \\ \Leftrightarrow x^2 - 4x - 96 &= 0 \Leftrightarrow (x-12)(x+8) = 0 \Leftrightarrow x = 12.\end{aligned}$$

So, required number =  $x - 4 = 8$ .

5, , Answer: Option C

Explanation:

Clearly, we have :

$B-3 = E$  ...(i)

$B + 3 = D$  ...(ii)

$A+B = D + E+10$  ...(iii)

$B = C + 2$  ...(iv)

$A+B + C + D + E = 133$  ...(v)

From (i) and (ii), we have :  $2B = D + E$  ...(vi)

From (iii) and (vi), we have :  $A = B + 10$  ...(vii)

Using (iv), (vi) and (vii) in (v), we get:

$$(B + 10) + B + (B - 2) + 2B = 133 \quad 5B = 125 \quad B = 25.$$

6, Answer: Option C

Explanation:

Let the number of pineapples and watermelons be  $x$  and  $y$  respectively.

$$\text{Then, } 7x + 5y = 38 \text{ or } 5y = (38 - 7x) \text{ or } y = \frac{38 - 7x}{5}.$$

Clearly,  $y$  is a whole number, only when  $(38 - 7x)$  is divisible by 5.

This happens when  $x = 4$ .

7, Answer: Option C

Explanation:

Let  $x$  and  $y$  be the ten's and unit's digits respectively of the numeral denoting the woman's age.

Then, woman's age =  $(10x + y)$  years; husband's age =  $(10y + x)$  years.

$$\text{Therefore } (10y + x) - (10x + y) = (1/11) (10y + x + 10x + y)$$

$$(9y - 9x) = (1/11)(11y + 11x) = (x + y) \quad 10x = 8y \quad x = (4/5)y$$

Clearly,  $y$  should be a single-digit multiple of 5, which is 5.

So,  $x = 4$ ,  $y = 5$ .

Hence, woman's age =  $10x + y = 45$  years.

8, Answer: Option B

Explanation:

Clearly, while counting, the numbers associated to the thumb will be : 1, 9, 17, 25,.....

i.e. numbers of the form  $(8n + 1)$ .

Since  $1994 = 249 \times 8 + 2$ , so 1993 shall correspond to the thumb and 1994 to the index finger.

9, Not Available

10, Answer: Option D

Explanation:

Since one of the numbers on the dial of a telephone is zero, so the product of all the numbers on it is 0.

11, Answer: Option C

Explanation:

Since B and D are twins, so  $B = D$ .

Now,  $A = B + 3$  and  $A = C - 3$ .

Thus,  $B + 3 = C - 3$     $D + 3 = C - 3$     $C - D = 6$ .

12, Answer: Option B

Explanation:

Clearly, every member except one (i.e. the winner) must lose one game to decide the winner. Thus, minimum number of matches to be played =  $30 - 1 = 29$ .

13, Answer: Option C

Explanation:

Each row contains 12 plants.

There are 11 gaps between the two corner trees ( $11 \times 2$ ) metres and 1 metre on each side is left.

Therefore Length =  $(22 + 2)$  m = 24 m.

14, Answer: Option B

Explanation:

Manick's present age = 12 years, Rahul's present age = 4 years.

Let Manick be twice as old as Rahul after  $x$  years from now.

Then,  $12 + x = 2(4 + x)$     $12 + x = 8 + 2x$     $x = 4$ .

Hence, Manick's required age =  $12 + x = 16$  years.

15, Answer: Option D

Explanation:

Number of cuts made to cut a roll into 10 pieces = 9.

Therefore Required number of r

16, Answer: Option C

Explanation:

Let the number of boys and girls participating in sports be  $3x$  and  $2x$  respectively.

Then,  $3x = 15$  or  $x = 5$ .

So, number of girls participating in sports =  $2x = 10$ .

Number of students not participating in sports =  $60 - (15 + 10) = 35$ .

Let number of boys not participating in sports be  $y$ .

Then, number of girls not participating in sports =  $(35 - y)$ .

Therefore  $(35 - y) = y + 5 \Rightarrow 2y = 30 \Rightarrow y = 15$ .

So, number of girls not participating in sports =  $(35 - 15) = 20$ .

Hence, total number of girls in the class =  $(10 + 20) = 30$ .  
Options =  $(45 \times 24)/9 = 120$ .

17, Answer: Option D

Explanation:

Let  $x$  and  $y$  be the number of deer and peacocks in the zoo respectively. Then,

$x + y = 80$  ...(i) and

$4x + 2y = 200$  or  $2x + y = 100$  ...(ii)

Solving (i) and (ii), we get  $x = 20$ ,  $y = 60$ .

18, Answer: Option A

Explanation:

Since there are socks of only two colours, so two out of any three socks must always be of the same colour.

19, Answer: Option D

Explanation:

Total number of routes from Bristol to Carlisle =  $(4 \times 3 \times 2) = 24$

20, Answer: Option C

Explanation:

Let money with Ken =  $x$ . Then, money with Mac =  $x + £ 3$ .

Now,  $3x = (x + x + £ 3) + £ 2 \Rightarrow x = £ 5$ .

Therefore Total money w

21, Answer: Option B

Explanation:

Let the number of boys be  $x$ . Then,  $(3/4)x = 18$  or  $x = 18 \times (4/3) = 24$ .

If total number of students is  $y$ , then  $(2/3)y = 24$  or  $y = 24 \times (3/2) = 36$ .

Therefore Number of girls in the class =  $(36 - 24) = 12$ .  
Options =  $2x + £ 3 = £ 13$ .

22, Answer: Option B

Explanation:

Let son's age be  $x$  years. Then, father's age =  $(3x)$  years.

Five years ago, father's age =  $(3x - 5)$  years and son's age =  $(x - 5)$  years.

$$So, 3x - 5 = 4(x - 5) \quad 3x - 5 = 4x - 20 \quad x = 15.$$

23, Answer: Option D

Let salary = Rs.  $x$ . Then tips = Rs.  $\left(\frac{5}{4}x\right)$ .

Total income = Rs.  $\left(x + \frac{5}{4}x\right)$  = Rs.  $\left(\frac{9x}{4}\right)$ .

$$\therefore \text{Required fraction} = \left(\frac{5x}{4} \times \frac{4}{9x}\right) = \frac{5}{9}.$$

24, Answer: Option C

Explanation:

Clearly, from 1 to 100, there are ten numbers with 3 as the unit's digit- 3, 13, 23, 33, 43, 53, 63, 73, 83, 93; and ten numbers with 3 as the ten's digit - 30, 31, 32, 33, 34, 35, 36, 37, 38, 39.

$$So, \text{required number} = 10 + 10 = 20.$$

25, Answer: Option D

Less cats, more days

(*Indirect Proportion*)

Less mice, less days

(*Direct Proportion*)

Let the required number of days be  $x$ .

$$\begin{array}{l} \text{Cat} \quad 4 : 100 \\ \text{Mice} \quad 100 : 4 \end{array} \left. \right\} :: x : 100$$

$$\therefore 100 \times 4 \times x = 4 \times 100 \times 100 \quad \text{or} \quad x = \left( \frac{4 \times 100 \times 100}{100 \times 4} \right) = 100.$$

26, Answer: Option B

Explanation:

L.C.M. of 6, 5, 7, 10 and 12 is 420.

So, the bells will toll together after every 420 seconds i.e. 7 minutes.

$$Now, 7 \times 8 = 56 \text{ and } 7 \times 9 = 63.$$

Thus, in 1-hour (or 60 minutes), the bells will toll together 8 times, excluding the one at the start.

27, Answer: Option D

Explanation:

Originally, let number of women =  $x$ . Then, number of men =  $2x$ .

So, in city Y, we have :  $(2x - 10) = (x + 5)$  or  $x = 15$ .

Therefore Total number of passengers in the beginning =  $(x + 2x) = 3x = 45$ .

28, Answer: Option A

Explanation:

Clearly, we have :

$$A = B - 3 \dots(i)$$

$$D + 5 = E \dots(ii)$$

$$A+C = 2E \dots(iii)$$

$$B + D = A+C = 2E \dots(iv)$$

$$A+B + C + D + E = 150 \dots(v)$$

From (iii), (iv) and (v), we get:  $5E = 150$  or  $E = 30$ .

Putting  $E = 30$  in (ii), we get:  $D = 25$ .

Putting  $E = 30$  and  $D = 25$  in (iv), we get:  $B = 35$ .

Putting  $B = 35$  in (i), we get:  $A = 32$ .

Putting  $A = 32$  and  $E = 30$  in (iii), we get:  $C = 28$ .

29, Answer: Option B

Explanation:

Since each pole at the corner of the plot is common to its two sides, so we have

:

$$\text{Total number of poles needed} = 27 \times 4 - 4 = 108 - 4 = 104.$$

30, Answer: Option D

31, Answer: Option B

Explanation:

We have :  $A = 3B \dots(i)$  and

$$C - 4 = 2(A - 4) \dots(ii)$$

Also,  $A + 4 = 31$  or  $A = 31 - 4 = 27$ .

Putting  $A = 27$  in (i), we get:  $B = 9$ .

Putting  $A = 27$  in (ii), we get  $C = 50$ .

32, Answer: Option C

Explanation:

Let Varan's age today =  $x$  years.

Then, Varan's age after 1 year =  $(x + 1)$  years.

Therefore  $x + 1 = 2(x - 12)$   $x + 1 = 2x - 24$   $x = 25$ .

33, Answer: Option A

Explanation:

There were all sparrows but six' means that six birds were not sparrows but only pigeons and ducks.

Similarly, number of sparrows + number of ducks = 6 and number of sparrows + number of pigeons = 6.

This is possible when there are 3 sparrows, 3 pigeons and 3 ducks i.e. 9 birds in all.

34, Answer: Option B

Explanation:

**Let the value of the holiday be  $x$ .**

**Then, pay for seven weeks' work = £ 300 +  $x$ .**

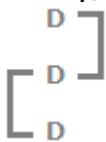
$$\text{So, } \frac{\text{£ } 300 + x}{7} \times 4 = \text{£ } 30 + x \Leftrightarrow \text{£ } 1200 + 4x = \text{£ } 210 + 7x$$

$$\Leftrightarrow 3x = \text{£ } 990 \Leftrightarrow x = \text{£ } 330.$$

35, Answer: Option A

Explanation:

Clearly, the smallest such number is 3.



Three ducks can be arranged as shown above to satisfy all the three given conditions.

36, Answer: Option B

Explanation:

Let Tanya's share = Rs.  $x$ . Then, Veena's share = Rs.  $\left(\frac{x}{2}\right)$ .

Total bill = Rs.  $\left(x + \frac{x}{2} + \frac{x}{3}\right) = \text{Rs. } \left(\frac{11x}{6}\right)$ .

Amita's share = Rs.  $\left(\frac{2}{3} \times \frac{x}{2}\right) = \text{Rs. } \left(\frac{x}{3}\right)$ .

∴ Required fraction =  $\left(\frac{x}{2} \times \frac{6}{11x}\right) = \frac{3}{11}$ .

37. Answer: Option B

Explanation:

Let total number of members be 100,

Then, number of members owning only 2 cars = 20.

Number of members owning 3 cars = 40% of 80 = 32.

Number of members owning only 1 car = 100 - (20 + 32) = 48.

Thus, 48% of the total members own one car each.

38, Answer: Option B

Explanation:

When Rahul was born, his brother's age = 6 years; his father's age =  $(6 + 32)$  years = 38 years, his mother's age =  $(38 - 3)$  years = 35 years; his sister's age =  $(35 - 25)$  years = 10 years.

39, Answer: Option C

Explanation:

Let number of horses = number of men =  $x$ .

Then, number of legs =  $4x + 2 \times (x/2) = 5x$ .

So,  $5X = 70$  or  $x = 14$ .

40, Answer: Option A

Explanation:

When Ravi's brother was born, let Ravi's father's age =  $x$  years and mother's age

= y years.

Then, sister's age =  $(x - 28)$  years. So,  $x - 28 = 4$  or  $x = 32$ .

Ravi's age =  $(y - 26)$  years. Age of Ravi's brother =  $(y - 26 + 3)$  years =  $(y - 23)$  years.

Now, when Ravi's brother was born, his age = 0 i.e.  $y - 23 = 0$  or  $y = 23$ .

41, Answer: Option C

Explanation:

Let number of girls =  $x$  and number of boys =  $3x$ .

Then,  $3x + x = 4x$  = total number of students.

Thus, to find exact value of  $x$ , the total number of students must be divisible by 4.

42, Answer: Option C

Explanation:

'All but nine died' means 'All except nine died' i.e. 9 sheep remained alive.

43, Answer: Option C

Let there be  $(x + 1)$  members. Then,

Father's share =  $\frac{1}{4}$ , share of each other member =  $\frac{3}{4x}$ .

$$\therefore 3\left(\frac{3}{4x}\right) = \frac{1}{4} \Leftrightarrow 4x = 36 \Leftrightarrow x = 9.$$

Hence, total number of family members = 10.

44, Answer: Option D

Explanation:

Let R, G and B represent the number of balls in red, green and blue boxes respectively.

Then, .

$$R + G + B = 108 \dots(i),$$

$$G + R = 2B \dots(ii)$$

$$B = 2R \dots(iii)$$

From (ii) and (iii), we have  $G + R = 2 \times 2R = 4R$  or  $G = 3R$ .

Putting  $G = 3R$  and  $B = 2R$  in (i), we get:

$$R + 3R + 2R = 108 \quad 6R = 108 \quad R = 18.$$

Therefore Number of balls in green box =  $G = 3R = (3 \times 18) = 54$ .

45, Answer: Option D

Explanation:

Total runs scored =  $(36 \times 5) = 180$ . Let the runs scored by E be  $x$ .

Then, runs scored by D =  $x + 5$ ; runs scored by A =  $x + 8$ ;

runs scored by B =  $x + 5 + 2x + 5$ ;

runs scored by C =  $(107 - B) = 107 - (2x + 5) = 102 - 2x$ .

So, total runs =  $(x + 8) + (2x + 5) + (102 - 2x) + (x + 5) + x = 3x + 120$ .

Therefore  $3x + 120 = 180$     $3x = 60$     $x = 20$ .

46, Answer: Option B

Explanation:

Total number of digits

= (No. of digits in 1-digit page nos. + No. of digits in 2-digit page nos. + No. of digits in 3-digit page nos.)

=  $(1 \times 9 + 2 \times 90 + 3 \times 267) = (9 + 180 + 801) = 990$ .

47, Answer: Option B

Explanation:

Let  $d$  and  $s$  represent the number of daughters and sons respectively.

Then, we have :

$d - 1 = s$  and  $2(s - 1) = d$ .

Solving these two equations, we get:  $d = 4$ ,  $s = 3$ .

48, Answer: Option B

Explanation:

Let the number of guests be  $x$ . Then,

$$\text{number of bowls of rice} = \frac{x}{2}; \text{ number of bowls of dal} = \frac{x}{3};$$

$$\text{number of bowls of meat} = \frac{x}{4}.$$

$$\therefore \frac{x}{2} + \frac{x}{3} + \frac{x}{4} = 65 \Leftrightarrow \frac{6x + 4x + 3x}{12} = 65 \Leftrightarrow 13x = 65 \times 12$$

$$\Leftrightarrow x = \left( \frac{65 \times 12}{13} \right) = 60.$$

49, Answer: Option A

Explanation:

Ayush's present age = 10 years.

His mother's present age =  $(10 + 20)$  years = 30 years.

Ayush's father's present age =  $(30 + 5)$  years = 35 years.

Ayush's father's age at the time of Ayush's birth =  $(35 - 10)$  years = 25 years.

Therefore Ayush's father's age at the time of marriage =  $(25 - 2)$  years = 23 years.

50, Answer: Option D

Explanation:

Let total number of sweets be  $x$ . Then,

$$\frac{x}{140} - \frac{x}{175} = 4 \Leftrightarrow 5x - 4x = 4 \times 700 \Leftrightarrow x = 2800.$$

## Verbal Reasoning:: Arithmetic Reasoning 2

TIME: 35 MINUTES

1. A student got twice as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly ?  
**A.** 12                           **B.** 16  
**C.** 18                           **D.** 24
  
2. David gets on the elevator at the 11th floor of a building and rides up at the rate of 57 floors per minute. At the same time, Albert gets on an elevator at the 51st floor of the same building and rides down at the rate of 63 floors per minute. If they continue travelling at these rates, then at which floor will their paths cross ?  
**A.** 19                           **B.** 28  
**C.** 30                           **D.** 37
  
3. I have a few sweets to be distributed. If I keep 2, 3 or 4 in a pack, I am left with one sweet. If I keep 5 in a pack, I am left with none. What is the minimum number of sweets I have to pack and distribute ?  
**A.** 25                           **B.** 37  
**C.** 54                           **D.** 65
  
4. If a clock takes seven seconds to strike seven, how long will it take to strike ten ?  
**A.** 7 seconds  
**B.** 9 seconds  
**C.** 10 seconds  
**D.** None of these

5. In a group of cows and hens, the number of legs are 14 more than twice the number of heads. The number of cows is
- A. 5      B. 7  
C. 10      D. 12
6. A father tells his son, "I was of your present age when you were born". If the father is 36 now, how old was the boy five years back ?
- A. 13      B. 15  
C. 17      D. 20
7. A fires 5 shots to B's 3 but A kills only once in 3 shots while B kills once in 2 shots. When B has missed 27 times, A has killed
8. In a class,  $\frac{3}{5}$  of the students are girls and rest are boys. If  $\frac{2}{9}$  of the girls and  $\frac{1}{4}$  of the boys are absent, what part of the total number of students is present ?
- A.  $\frac{17}{25}$       B.  $\frac{18}{49}$   
C.  $\frac{23}{30}$       D.  $\frac{23}{36}$
9. In a family, a couple has a son and a daughter. The age of the father is three times that of his daughter and the age of the son is half of that of his mother. The wife is 9 years younger to her husband and the brother is seven years older than his sister. What is the age of the mother ?
- A. 40 years  
B. 45 years  
C. 50 years

**D.** 60 years

10. If a 1 mm thick paper is folded so that the area is halved at every fold, then what would be the thickness of the pile after 50 folds ?

- A.** 100 km
- B.** 1000 km
- C.** 1 million km
- D.** 1 billion km

11. First bunch of bananas has  $(1/4)$  again as many bananas as a second bunch. If the second bunch has 3 bananas less than the first bunch, then the number of bananas in the first bunch is

- A.** 9
- B.** 10
- C.** 12
- D.** 15

12. Mr. X, a mathematician, defines a number as 'connected with 6 if it is divisible by 6 or if the sum of its digits is 6, or if 6 is one of the digits of the number. Other numbers are all 'not connected with 6'. As per this definition, the number of integers from 1 to 60 (both inclusive) which are not connected with 6 is

- A.** 18
- B.** 22
- C.** 42
- D.** 43

13. Find the number which when added to itself 13 times, gives 112.

- A.** 7
- B.** 8
- C.** 9
- D.** 11

14. Aruna cut a cake into two halves and cuts one half into smaller pieces of equal size. Each of the small pieces is twenty grams in weight. If she has seven pieces of the cake in all with her, how heavy was the original cake

?

- A. 120 grams
- B. 140 grams
- C. 240 grams
- D. 280 grams
- E. None of these

15. A total of 324 coins of 20 paise and 25 paise make a sum of Rs. 71. The number of 25-paise coins is

- A. 120
- B. 124
- C. 144
- D. 200

16. A player holds 13 cards of four suits, of which seven are black and six are red. There are twice as many diamonds as spades and twice as many hearts as diamonds. How many clubs does he hold ?

- A. 4
- B. 5
- C. 6
- D. 7

17. The taxi charges in a city comprise of a fixed charge, together with the charge of the distance covered. For a journey of 16 km, the charges paid are Rs. 156 and for a journey of 24 km, the charges paid are Rs. 204. What will a person have to pay for travelling a distance of 30 km?

- A. Rs. 236
- B. Rs. 240
- C. Rs. 248
- D. Rs. 252

18. If every 2 out of 3 readymade shirts need alterations in the sleeves, and every 4 out of 5 need it in the body, how many alterations will be required for 60 shirts ?
- A. 88      B. 123  
C. 133      D. 143
19. At the end of a business conference the ten people present all shake hands with each other once. How many handshakes will there be altogether ?
- A. 20      B. 45  
C. 55      D. 90
20. After distributing the sweets equally among 25 children, 8 sweets remain. Had the number of children been 28, 22 sweets would have been left after equal distribution. What was the total number of sweets ?
- A. 328  
B. 348  
C. 358  
D. Data inadequate
21. A group of 1200 persons consisting of captains and soldiers is travelling in a train. For every 15 soldiers there is one captain. The number of captains in the group is
- A. 85      B. 80  
C. 75      D. 70
22. In a caravan, in addition to 50 hens, there are 45 goats and 8 camels with some keepers. If the total number of feet be 224 more than the number of heads in the caravan, the number of

keepers is

- |       |       |
|-------|-------|
| A. 5  | B. 8  |
| C. 10 | D. 15 |

23. A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing in the beginning of the next hour. If he begins his ascent at 8.00 a.m., at what time will he first touch a flag at 120 feet from the ground?

- |           |                  |
|-----------|------------------|
| A. 4 p.m. | B. 5 p.m.        |
| C. 6 p.m. | D. None of these |

24. A number consists of two digits whose sum is 11. If 27 is added to the number, then the digits change their places. What is the number ?

- |       |       |
|-------|-------|
| A. 47 | B. 65 |
| C. 83 | D. 92 |

25. An enterprising businessman earns an income of Re. 1 on the first day of his business. On every subsequent day, he earns an income which is just double of that made on the previous day. On the 10th day of business, his income is

- |              |                 |
|--------------|-----------------|
| A. Rs. $2^9$ | B. Rs. $2^{10}$ |
| C. Rs. 10    | D. Rs. $10^2$   |

26. Nitin's age was equal to square of some number last year and the following year it would be cube of a number. If again Nitin's age has to be equal to the cube of some number, then for how long he will have to wait?
- A. 10 years  
B. 38 years  
C. 39 years  
D. 64 years
27. On Children's Day, sweets were to be equally distributed among 175 children in a school. Actually on the Children's Day, 35 children were absent and therefore each child got 4 sweets extra. Total how many sweets were available for distribution ?
- A. 2400                          B. 2480  
C. 2680                          D. 2800
28. Between two book-ends in your study are displayed your five favourite puzzle books. If you decide to arrange the five books in every possible combination and moved just one book every minute, how long would it take you ?
- A. 1 hour  
B. 2 hours  
C. 3 hours  
D. 4 hours
29. A placed three sheets with two carbons to get two extra copies of the original. Then he decided to get more carbon copies and folded the paper in such a way that the upper half of the sheets were on top of the lower half. Then he typed. How many carbon copies did he get?

**A.** 1

**B.** 2

**C.** 3

**D.** 4

30. A printer numbers the pages of a book starting with 1 and uses 3189 digits in all. How many pages does the book have ?

**A.** 1000

**B.** 1074

**C.** 1075

**D.** 1080

## Arithmetic Reasoning 2: Answer & Explanation

1, Answer: Option B

Explanation:

Suppose the boy got  $x$  sums right and  $2x$  sums wrong.

$$\text{Then, } x + 2x = 48 \quad 3x = 48 \quad x = 16.$$

2,, Answer: Option C

Suppose their paths cross after  $x$  minutes.

$$\text{Then, } 11 + 57x = 51 - 63x \Leftrightarrow 120x = 40 \Leftrightarrow x = \frac{1}{3}.$$

$$\text{Number of floors covered by David in } \frac{1}{3} \text{ min.} = \left( \frac{1}{3} \times 57 \right) = 19.$$

So, their paths cross at  $(11 + 19)$ th i.e. 30th floor.

3, Answer: Option A

Explanation:

Clearly, the required number would be such that it leaves a remainder of 1 when divided by 2, 3 or 4 and no remainder when divided by 5. Such a number is 25.

4, SAnswer: Option D

Explanation:

**Clearly, seven strikes of a clock have 6 intervals while 10 strikes have 9 intervals.**

$$\therefore \text{Required time} = \left(\frac{7}{6} \times 9\right) \text{ seconds} = 10\frac{1}{2} \text{ seconds.}$$

5, Answer: Option B

Explanation:

Let the number of cows be  $x$  and the number of hens be  $y$ .

$$\begin{aligned} \text{Then, } 4x + 2y &= 2(x + y) + 14 & 4x + 2y &= 2x + 2y + 14 & 2x &= 14 & x \\ &= 7. \end{aligned}$$

6, Answer: Option A

Explanation:

Let the father's age be  $x$  and the son's age be  $y$ .

$$\text{Then, } x - y = y \text{ or } x = 2y,$$

$$\text{Now, } x = 36. \text{ So, } 2y = 36 \text{ or } y = 18.$$

Therefore Son's present age = 18 years.

So, son's age 5 years ago = 13 years.

7, Not Available

8, Answer: Option C

Explanation:

$$\text{Girls} = \frac{3}{5}, \text{Boys} = \left(1 - \frac{3}{5}\right) = \frac{2}{5}.$$

$$\text{Fraction of students absent} = \frac{2}{9} \text{ of } \frac{3}{5} + \frac{1}{4} \text{ of } \frac{2}{5} = \frac{6}{45} + \frac{1}{10} = \frac{21}{90} = \frac{7}{30}.$$

$$\therefore \text{Fraction of students present} = \left(1 - \frac{7}{30}\right) = \frac{23}{30}.$$

9, Answer: Option D

Explanation:

Let the daughter's age be  $x$  years.

Then, father's age =  $(3x)$  years.

Mother's age =  $(3x - 9)$  years; Son's age =  $(x + 7)$  years.

$$\text{So, } x + 7 = (3x - 9)/2 \quad 2x + 14 = 3x - 9 \quad x = 23.$$

Therefore Mother's age =  $(3X - 9) = (69 - 9)$  years = 60 years.

10, Answer: Option D

Explanation:

Since the area is halved on folding, so each time the paper is folded in the centre i.e. its thickness becomes two-fold each time. So, we have :

Thickness after 1 fold = 2 mm;

Thickness after 2 folds =  $(2 \times 2)$  mm =  $2^2$  mm;

Thickness after 3 folds =  $(2^2 \times 2)$  mm =  $2^3$  mm; and so on.

$$\therefore \text{Thickness after 50 folds} = 2^{50} \text{ mm} = \left( \frac{2^{50}}{1000 \times 1000} \right) \text{ km.}$$

$$\text{Let } x = \frac{2^{50}}{(1000)^2}. \text{ Then,}$$

$$\log x = 50 \log 2 - 2 \log 1000 = 50 \times 0.3010 - 2 \times 3 = 9.050 \sim 9.$$

$$\text{So, } x = \text{antilog } 9 = 1000000000.$$

$$\text{Hence, thickness after 50 folds} = x \text{ km} = 1 \text{ billion km.}$$

11, Answer: Option D

Explanation:

Let the number of bananas in the second bunch be  $x$ .

$$\text{Then, number of bananas in the first bunch} = x + \frac{1}{4}x = \frac{5}{4}x.$$

$$\text{So, } \frac{5}{4}x - x = 3 \Leftrightarrow 5x - 4x = 12 \Leftrightarrow x = 12.$$

$$\therefore \text{Number of bananas in the first bunch} = \left( \frac{5}{4} \times 12 \right) = 15.$$

12, Answer: Option D

Explanation:

Numbers from 1 to 60, which are divisible by 6 are : 6, 12, 18, 24, 30, 36, 42, 48, 54, 60.

There are 10 such numbers.

Numbers from 1 to 60, the sum of whose digits is 6 are : 6, 15, 24, 33, 42, 51, 60.

There are 7 such numbers of which 4 are common to the above ones.

So, there are 3 such uncommon numbers.

Numbers from 1 to 60, which have 6 as one of the digits are 6, 16, 26, 36, 46, 56, 60.

Clearly, there are 4 such uncommon numbers.

So, numbers 'not connected with 6' =  $60 - (10 + 3 + 4) = 43$ .

13, Answer: Option B

14, Answer: Option C

Explanation:

The seven pieces consist of 6 smaller equal pieces and one half cake piece.

Weight of each small piece = 20 g.

So, total weight of the cake =  $[2 \times (20 \times 6)]g = 240$  g.e number be  $x$ .  
Then,  $x + 13x = 112$     $14x = 112$     $x = 8$ .

15, Answer: Option B

Explanation:

Let the number of 20-paise coins be  $x$ . Then, number of 25-paise coins =  $(324 - x)$ .

Therefore  $0.20 \times x + 0.25 (324 - x) = 71$     $20x + 25 (324 - x) = 7100$

$5x = 1000$     $x = 200$ . Hence, number of 25-paise coins =  $(324 - x) - 124$

16, Answer: Option C

Explanation:

Clearly, the black cards are either clubs or spades while the red cards are either diamonds or hearts.

Let the number of spades be  $x$ . Then, number of clubs =  $(7 - x)$ .

Number of diamonds =  $2 \times$  number of spades =  $2x$ ;

Number of hearts =  $2 \times$  number of diamonds =  $4x$ .

Total number of cards =  $x + 2x + 4x + 7 - x = 6x + 7$ .

Therefore  $6x + 7 = 13$     $6x = 6$     $x = 1$ .

Hence, number of clubs =  $(7 - x) = 6$ .

17, Answer: Option B

Explanation:

Let the fixed charge be Rs.  $x$  and variable charge be Rs.  $y$  per km. Then,

$$x + 16y = 156 \dots(i)$$
 and

$$x + 24y = 204 \dots(ii)$$

Solving (i) and (ii), we get:  $x = 60$ ,  $y = 6$ .

Therefore Cost of travelling 30 km =  $60 + 30 \times 6$  = Rs.  $(60 + 30 \times 6)$  = Rs. 240.

18, Answer: Option C

Explanation:

$$\text{Number of alterations required in 1 shirt} = \left( \frac{2}{3} + \frac{3}{4} + \frac{4}{5} \right) = \frac{133}{60}.$$

$$\therefore \text{Number of alterations required in 60 shirts} = \left( \frac{133}{60} \times 60 \right) = 133.$$

19, Answer: Option B

Explanation:

Clearly, total number of handshakes =  $(9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1) = 45$ .

20, Answer: Option C

Explanation:

Let the total number of sweets be  $(25x + 8)$ .

Then,  $(25x + 8) - 22$  is divisible by 28

$(25x - 14)$  is divisible by 28     $28x - (3x + 14)$  is divisible by 28

$(3x + 14)$  is divisible by 28     $x = 14$ .

Therefore Total number of sweets =  $(25 \times 14 + 8) = 358$ .

21, Answer: Option C

Explanation:

Clearly, out of every 16 persons, there is one captain. So, number of captains  $(1200/16) = 75$ .

22, , Answer: Option D

Explanation:

Let number of keepers be  $x$ . Then,

$$\text{Total number of feet} = 2 \times 50 + 4 \times 45 + 4 \times 8 + 2x = 2x + 312.$$

$$\text{Total number of heads} = 50 + 45 + 8 + x = 103 + x.$$

$$\text{Therefore } (2x + 312) = (103 + x) + 224 \text{ or } x = 15.$$

23, Answer: Option C

Explanation:

Net ascent of the monkey in 1 hour =  $(30 - 20)$  feet = 10 feet.

So, the monkey ascends 90 feet in 9 hours i.e. till 5 p.m.

Clearly, in the next 1 hour i.e. till 6 p.m. the monkey ascends remaining 30 feet to touch the flag.

24, Answer: Option A

Explanation:

Let the ten's digit be  $x$ . Then, unit's digit =  $(11 - x)$ .

$$\text{So, number} = 10x + (11 - x) = 9x + 11.$$

$$\text{Therefore } (9x + 11) + 27 = 10(11 - x) + x \quad 9x + 38 = 110 - 9x \quad 18x = 72 \quad x = 4.$$

Thus, ten's digit = 4 and unit's digit = 7.

Hence, required number = 47.

25, Answer: Option A

Explanation:

Income on the first day = Re. 1.

Income on the 2nd day = Rs.  $(1 \times 2)$  = Rs. 21.

Income on the 3rd day = Rs.  $(21 \times 2)$  = Rs. 22 and so on. Thus, Income on the rath day = Rs.  $2n-1$ .

Therefore Income on the 10th day = Rs. 29.

26, Answer: Option B

Explanation:

Clearly, we have to first find two numbers whose difference is 2 and of which the smaller one is a perfect square and the bigger one a perfect cube.

Such numbers are 25 and 27.

Thus, Nitin is now 26 years old. Since the next perfect cube after 27 is 64,

so required time period =  $(64 - 26)$  years = 38 years.

27, , Answer: Option D

**Let total number of sweets be  $x$ . Then,**

$$\frac{x}{140} - \frac{x}{175} = 4 \Leftrightarrow 5x - 4x = 4 \times 700 \Leftrightarrow x = 2800.$$

28, Answer: Option B

Explanation:

Clearly, number of ways of arranging 5 books =  $5 ! = 5 \times 4 \times 3 \times 2 \times 1 =$

120.

So, total time taken = 120 minutes = 2 hours.

29, Answer: Option B

Explanation:

Since the number of carbons is 2, only two copies can be obtained.

30, Answer: Option B

Explanation:

No. of digits in 1-digit page nos. =  $1 \times 9 = 9$ .

No. of digits in 2-digit page nos. =  $2 \times 90 = 180$ .

No. of digits in 3-digit page nos. =  $3 \times 900 = 2700$ .

No. of digits in 4-digit page nos. =  $3189 - (9 + 180 + 2700) = 3189 - 2889 = 300$ .

Therefore No. of pages with 4-digit page nos. =  $(300/4) = 75$ .

Hence, total number of pages =  $(999 + 75) = 1074$ .

# Logical Reasoning :: Statement and Argument Test

**TME: 55 MINUTES**

## Directions to Solve

*Each question given below consists of a statement, followed by two arguments numbered I and II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument.*

Give answer:

- (A) If only argument I is strong
  - (B) If only argument II is strong
  - (C) If either I or II is strong
  - (D) If neither I nor II is strong and
  - (E) If both I and II are strong.
1. Statement: Should India encourage exports, when most things are insufficient for internal use itself?

Arguments:

1. Yes. We have to earn foreign exchange to pay for our imports.
  2. No. Even selective encouragement would lead to shortages.
    - A. Only argument I is strong
    - B. Only argument II is strong
    - C. Either I or II is strong
    - D. Neither I nor II is strong
    - E. Both I and II are strong
2. Statement: Should all the drugs patented and manufactured in Western countries be first tried out on sample basis before giving licence for sale to

general public in India?

Arguments:

1. Yes. Many such drugs require different doses and duration for Indian population and hence it is necessary.

2. No. This is just not feasible and hence cannot be implemented.

A .Only argument I is strong

B. Only argument II is strong

C .Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

3. Statement: Should India make efforts to harness solar energy to fulfil its energy requirements?

Arguments:

1. Yes, Most of the energy sources used at present is exhaustible.

2. No. Harnessing solar energy requires a lot of capital, which India lacks in.

A .Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D .Neither I nor II is strong

E. Both I and II are strong

4. Statement: Should there be students union in college/university?

Arguments:

1. No. This will create a political atmosphere in the campus.

2. Yes, it is very necessary Students are future political leaders.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

5. Statement: Should India give away Kashmir to Pakistan?

Arguments:

- 1. No. Kashmir is a beautiful state. It earns a lot of foreign exchange for India.
- 2. Yes. This would help settle conflicts.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C .Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

6. Statement: Should cottage industries be encouraged in rural areas?

Arguments:

- 1. Yes. Rural people are creative.
- 2. Yes. This would help to solve the problem of unemployment to some extent.
  - A .Only argument I is strong

- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

7. Statement: Should young entrepreneurs be encouraged?

Arguments:

- 1. Yes. They will help in industrial development of the country.
- 2. Yes. They will reduce the burden on employment market.

  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

8. Statement: Should all the annual examinations up to Std. V be abolished?

Arguments:

- 1. Yes. The young students should not be burdened with such examinations which hampers their natural growth.
- 2. No. The students will not study seriously as they will get automatic promotion to the next class and this will affect them in future.

  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

9. Statement: Should Indian scientists working abroad be called back to India?

Arguments:

1. Yes. They must serve the motherland first and forget about discoveries, honours, facilities and all.

2. No. We have enough talent; let them stay where they want.

A. Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

10. Statement: Should we scrap the system of formal education beyond graduation?

Arguments:

1. Yes. It will mean taking employment at an early date.

2. No. It will mean lack of depth of knowledge.

A. Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

11. Statement: Should there be an upper age limit of 65 years for contesting Parliamentary/ Legislative Assembly elections?

Arguments:

1. Yes. Generally, people above the age of 65 lose their dynamism and will power.
2. No. The life span is so increased that people remain physically and mentally active even up to the age of 80.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

12. Statement: Should new big industries be started in Mumbai?

Arguments:

1. Yes. It will create job opportunities.
2. No. It will further add to the pollution of the city.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

13. Statement: Should high chimneys be installed in industries?

Arguments:

1. Yes. It reduces pollution at ground level.
2. No. It increases pollution in upper atmosphere.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

14. Statement: Does India need so many plans for development?

Arguments:

1. Yes. Nothing can be achieved without proper planning.
2. No. Too much time, money and energy is wasted on planning.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

15. Statement: Should articles of only deserving authors be allowed to be published?

Arguments:

1. Yes. It will save a lot of paper which is in short supply.
2. No. It is not possible to draw a line between the deserving and the

undeserving.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

16. Statement: Should colleges be given the status of a university in India?

Arguments:

- 1. Yes. Colleges are in a better position to assess the student's performance and therefore the degrees will be more valid.
  - 2. No. It is Utopian to think that there will not be nepotism and corruption in awarding degrees by colleges.
- A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

17. Statement: Should the prestigious people who have committed crime unknowingly, be met with special treatment?

Arguments:

- 1. Yes. The prestigious people do not commit crime intentionally.
  - 2. No. It is our policy that everybody is equal before the law.
- A. Only argument I is strong

- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

18. Statement: Can pollution be controlled?

Arguments:

- 1. Yes. If everyone realizes the hazards it may create and cooperates to get rid of it, pollution may be controlled.
- 2. No. The crowded highways, factories and industries and an ever-growing population eager to acquire more and more land for constructing houses are beyond control.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

19. Statement: Should the railways in India be privatized in a phased manner like other public sector enterprises?

Arguments:

- 1. Yes. This is the only way to bring in competitiveness and provide better services to the public.
- 2. No. This will pose a threat to the national security of our country as multinationals will enter into the fray.

- A. Only argument I is strong

- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

20. Statement: Should internal assessment in colleges be abolished?

Arguments:

- 1. Yes. This will help in reducing the possibility of favouritism.
- 2. No, teaching faculty will lose control over students.

  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

21. Statement: Should all the unauthorized structures in the city be demolished?

Arguments:

- 1. No. Where will the people residing in such houses live?
- 2. Yes. This will give a clear message to general public and they will refrain from constructing unauthorized buildings.\

22. Statement: Should there be a maximum limit for the number of ministers in the Central Government?

Arguments:

1. No. The political party in power should have the freedom to decide the number of ministers to be appointed.
2. Yes. The number of ministers should be restricted to a certain percentage of the total number of seats in the parliament to avoid unnecessary expenditure.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

23. Statement: Should foreign films be banned in India?

Arguments:

1. Yes. They depict an alien culture which adversely affects our values.
2. No. Foreign films are of a high artistic standard.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

24. Statement: Is buying things on instalments profitable to the customer?

Arguments:

1. Yes. He has to pay less.
2. No, paying instalments upsets the family budget.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

25. Statement: Should Doordarshan be given autonomous status?

Arguments:

- 1. Yes. It will help Doordarshan to have fair and impartial coverage of all important events.
- 2. No. The coverage of events will be decided by a few who may not have healthy outlook.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

26. Statement: Should adult education programme be given priority over compulsory education programme?

Arguments:

- 1. No. It will also help in success of compulsory education programme.
- 2. Yes. It will help to eliminate the adult illiteracy.
  - A. Only argument I is strong
  - B. Only argument II is strong

- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

27. Statement: Should new universities be established in India?

Arguments:

- 1. No. We have still not achieved the target for literacy.
- 2. No. We will have to face the problem of unemployed but highly qualified people.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

28. Statement: Should non-vegetarian food be totally banned in our country?

Arguments:

- 1. Yes. It is expensive and therefore it is beyond the means of most people in our country.
- 2. No. Nothing should be banned in a democratic country like ours.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong

E. Both I and II are strong

29. Statement: Should a total ban be put on trapping wild animals?

Arguments:

1. Yes. Trappers are making a lot of money;
2. No. Bans on hunting and trapping are not effective.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

30. Statement: Should Government close down loss-making public sector enterprises?

Arguments:

1. No. All employees will lose their jobs, security and earning, what would they do?
  2. Yes. In a competitive world the rule is 'survival of the fittest'.
- A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

31. Statement: Should government jobs in rural areas have more incentives?

Arguments:

1. Yes. Incentives are essential for attracting government servants there.
2. No. Rural areas are already cheaper, healthier and less complex than big cities. So ? Why offer extra incentives?
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

32. Statement: Should there be a cap on maximum number of contestants for parliamentary elections in any constituency?

Arguments:

1. Yes. This will make the parliamentary elections more meaningful as the voters can make a considered judgement for casting their vote.
2. No. In a democracy any person fulfilling the eligibility criteria can contest parliamentary elections and there should be no restrictions.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

33. Statement: Should so much money be spent on advertisements?

Arguments:

1. Yes. It is an essential concomitant in a capitalist economy.
2. No. It leads to wastage of resources.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

34. Statement: Should all the legislators be forced to resign from their profession?

Arguments:

1. Yes. They will be able to devote more time for the country.
2. No, nobody will contest election.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

35. Statement: Should 'computer knowledge' be made a compulsory subject for all the students at secondary school level?

Arguments:

1. No, our need is 'bread' for everyone, we cannot follow western models.
2. Yes. We cannot compete in the international market without equipping our children with computers.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

36. Statement: Should there be uniforms for students in the colleges in India as in the schools?

Arguments:

- 1. Yes, this will improve the ambience of the colleges as all the students will be decently dressed.
  - 2. No. The college students should not be regimented and they should be left to choose their clothes for coming to the college.
- A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

37. Statement: Should India engage into a dialogue with neighbouring countries to stop cross border tension?

Arguments:

- 1. Yes. This is the only way to reduce the cross border terrorism and stop loss of innocent lives.
- 2. No. Neighbouring countries cannot be relied upon in such matters, they may still engage in subversive activities.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

38. Statement: Should there be a world government?

Arguments:

- 1. Yes. It will help in eliminating tensions among the nations.
- 2. No. Then, only the developed countries will dominate in the government.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

39. Statement: Should the practice of transfers of clerical cadre employees from government offices of one city to those of another be stopped?

Arguments:

- 1. No. Transfer of employees is a routine administrative matter and we must continue it.
- 2. Yes. It involves lot of governmental expenditure and inconvenience too many compared to the benefits it yields.
  - A. Only argument I is strong
  - B. Only argument II is strong

- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

40. Statement: Is paying ransom or agreeing to the conditions of kidnappers of political figures, a proper course of action?

Arguments:

- 1. Yes. The victims must be saved at all cost.
  - 2. No. It encourages the kidnappers to continue their sinister activities.
- A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

41. Statement: Should religion be banned?

Arguments:

- 1. Yes. It develops fanaticism in people.
  - 2. No, Religion binds people together.
- A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

42. Statement: Should India become a permanent member of UN's Security Council?

Arguments:

1. Yes. India has emerged as a country which loves peace and amity.
2. No. Let us first solve problems of our own people like poverty, malnutrition.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

43. Statement: Should fashionable dresses be banned?

Aruments:

1. Yes. Fashions keep changing and hence consumption of cloth increases.
2. No. Fashionable clothes are a person's self expression and therefore his/her fundamental right.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

44. Statement: Should an organization like UNO be dissolved?

Arguments:

1. Yes. With cold war coming to an end, such organizations have no role to play
2. No, In the absence of such organizations there may be a world war.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

45. Statement: Should there be no place of interview in selection?

Arguments:

1. Yes, it is very subjective in assessment.
2. No. It is the only instrument to judge candidates' motives and personality.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

46. Statement: Should family planning be made compulsory in India?

Arguments:

1. Yes. Looking to the miserable conditions in India, there is no other go.
2. No. In India there are people of various religions and family planning is against the tenets of some of the religions.

- A. Only argument I is strong
- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

47. Statement: Should income tax be abolished in India?

Arguments:

- 1. Yes. It is an unnecessary burden on the wage earners.
- 2. No. It is a good source of revenue.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

48. Statement: Should there be a ceiling on the salary of top executives of multinationals in our country?

Arguments:

- 1. Yes. Otherwise it would lead to unhealthy competition and our own industry would not be able to withstand that.
- 2. No. With the accent on liberalization of economy, any such move would be counter-productive. Once the economy picks up, this disparity will be reduced.
  - A. Only argument I is strong

- B. Only argument II is strong
- C. Either I or II is strong
- D. Neither I nor II is strong
- E. Both I and II are strong

49. Statement: Should school education be made free in India?

Arguments:

- 1. Yes. This is the only way to improve the level of literacy.
- 2. No. It would add to the already heavy burden on the exchequer.

  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

50. Statement: Should import duty on all the electronic goods be dispensed with?

Arguments:

- 1. No. This will considerably reduce the income of the government and will adversely affect the developmental activities.
- 2. No. The local manufacturers will not be able to compete with the foreign manufacturers who are technologically far superior.

  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

51. Statement: Should children be legally made responsible to take care of their parents during their old age?

Arguments:

1. Yes. Such matter can only be solved by legal means.

2. Yes. Only this will bring some relief to poor parents.

A. Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

52. Statement: Should there be reservation in Government jobs for candidates from single child family?

Arguments:

1. No. This is not advisable as the jobs should be offered to only deserving candidates without any reservation for a particular group.

2. Yes. This will help reduce the growing population in India as the parents will be encouraged to adopt single child norm.

A. Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

53. Statement: Should higher education be completely stopped for some time?

Arguments:

1. No. It will hamper the country's future progress.

2. Yes. It will reduce the educated unemployment.

A. Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

54. Statement: Should we scrap the 'Public Distribution System' in India?

Arguments:

1. Yes, Protectionism is over, everyone must get the bread on his/her own.

2. Yes. The poor do not get any benefit because of corruption.

A. Only argument I is strong

B. Only argument II is strong

C. Either I or II is strong

D. Neither I nor II is strong

E. Both I and II are strong

55. Statement: Should India have no military force at all?

Arguments:

1. No. Other countries in the world do not believe in non-violence.
2. Yes. Many Indians believe in non-violence.
  - A. Only argument I is strong
  - B. Only argument II is strong
  - C. Either I or II is strong
  - D. Neither I nor II is strong
  - E. Both I and II are strong

# **Answer & Explanation**

1, Answer: Option A

Explanation:

Clearly, India can export only the surplus and that which can be saved after fulfilling its own needs, to pay for its imports. Encouragement to export cannot lead to shortages as it shall provide the resources for imports. So, only argument I holds.

2, Answer: Option A

Explanation:

Clearly, health of the citizens is an issue of major concern for the Government. So, a product like drugs, must be first studied and tested in the Indian context before giving licence for its sale. So, only argument I holds strong.

3, Answer: Option A

Explanation:

Clearly, harnessing solar energy will be helpful as it is an inexhaustible resource unlike other resources. So, argument I holds. But argument II is vague as solar energy is the cheapest form of energy.

4, Answer: Option E

Explanation:

The students union formation shall be a step towards giving to students the basic education in the field of politics. However, it shall create the same political atmosphere in the campus. Thus, both the arguments hold strong.

5, Answer: Option A

**Explanation:**

Clearly, India cannot part with a state that is a major foreign exchange earner to it. So, argument I holds strong. Further, giving away a piece of land unconditionally and unreasonably is no solution to settle disputes. So, argument II is vague.

**6, Answer: Option B**

**Explanation:**

Clearly, cottage industries need to be promoted to create more job opportunities for rural people in the villages themselves. The reason that rural people are creative is vague. So, only argument II holds.

**7, Answer: Option E**

**Explanation:**

Clearly, encouraging the young entrepreneurs will open up the field for the establishment of new industries. Thus, it shall help in industrial development and not only employ the entrepreneurs but create more job opportunities for others as well. So, both the arguments hold strong.

**8, Answer: Option E**

**Explanation:**

Clearly, neither the students can be burdened with studies at such a tender age, nor can they be left free to take studies casually, as this shall weaken their basic foundation. So, both the arguments follow

**9, Answer: Option D**

**Explanation:**

Clearly, every person must be free to work wherever he wants and no compulsion should be made to confine one to one's own country. So, argument I is vague. However, talented scientists can be of great benefit to the nation and some alternatives as special incentives or better prospects may be made available to them to retain them within their motherland. So, argument II also does not hold.

**10, Answer: Option B**

**Explanation:**

Clearly, argument I is vague because at present too, many fields are open to all after graduation. However, eliminating the post-graduate courses would abolish higher and specialized studies which lead to understanding things better and deeply. So, argument II is valid.

**11, Answer: Option D**

**Explanation:**

The age of a person is no criterion for judging his mental capabilities and administrative qualities. So, none of the arguments holds strong.

**12, Answer: Option C**

**Explanation:**

Opening up of new industries is advantageous in opening more employment avenues, and disadvantageous in that it adds to the pollution. So, either of the arguments holds strong.

**13, nsWer: Option A**

**Explanation:**

Pollution at ground level is the most hazardous in the way of being injurious to human and animal life. So, argument I alone holds.

**14, Answer: Option A**

**Explanation:**

Before indulging in new development programme it is much necessary to plan the exact target, policies and their implementation and the allocation of funds which shows the right direction to work. So, argument I holds strong. Also, planning ensures full utilization of available resources and funds and stepwise approach towards the target. So, spending a part of money on it is no wastage. Thus, argument II is not valid.

**15, Answer: Option B**

**Explanation:**

Clearly, I does not provide a strong reason in support of the statement. Also, it is not possible to analyze the really deserving and not deserving. So/argument II holds strong.

16, Answer: Option D

Explanation:

Clearly, at the college level, all the students are assessed according to their performance in the University Exams and not on the basis of any criteria of a more intimate dealings with the students. So, argument I is vague. Also, at this level the awarding of degrees is impartial and simply based on his performance. So, argument II also does not hold.

17, Answer: Option B

Explanation:

The Constitution of India has laid down the doctrine of 'equality before the law'. So, argument II holds strong. Also, we cannot judge the intentions of a person behind committing a crime, So, argument I is vague.

18, Answer: Option C

Explanation:

The control of pollution, on one hand, seems to be impossible because of the ever-growing needs and the disconcern of the people but, on the other hand, the control is possible by a joint effort. So, either of the arguments will hold strong.

19, Answer: Option D

Explanation:

Privatization would no doubt lead to better services. But saying that this is the 'only way' is wrong. So, argument I does not hold. Argument II also seems to be vague.

20, Answer: Option A

Explanation:

Abolishing the internal assessment would surely reduce favouritism on

personal grounds because the teachers would not be involved in examination system so that they cannot extend personal benefits to anyone. So, argument I holds strong. But it will not affect the control of teaching faculty on students because still the teachers would be teaching them. So, argument II is vague.

21, Answer: Option B

Explanation:

The demolition of unauthorized buildings would teach a lesson to the unscrupulous builders and also serve as a warning for the citizens not to indulge in such activities in the future. This is essential, as unauthorized constructions impose undue burden on the city's infrastructure. So, only argument II holds strong.

22, Answer: Option B

Explanation:

Clearly, there should be some norms regarding the number of ministers in the Government, as more number of ministers would unnecessarily add to the Government expenditure. So, argument II holds strong; Also, giving liberty to the party in power could promote extension of unreasonable favour to some people at the cost of government funds. So, argument I does not hold.

23, Answer: Option D

Explanation:

Clearly, foreign films depict the alien culture but this only helps in learning more. So, argument I does not hold. Also, the reason stated in argument II is not strong enough in contradicting the ban. So, it also does not hold.

24, Answer: Option D

Explanation:

In buying things on instalments, a customer has to pay more as the interest is also included. So, argument I does not hold. Moreover, one

who buys an item on instalments maintains his future budget accordingly as he is well acquainted with when and how much he has to pay, beforehand. So, argument II is also not valid.

25, Answer: Option A

Explanation:

Clearly, the autonomous status of the Doordarshan will be a step towards giving it independence for an impartial coverage. Autonomous status does not mean that the coverage will be decided by a few. So, only argument I holds.

26, Answer: Option B

Explanation:

Clearly, argument I gives a reason in support of the statement and so it does not hold strong against it. The adult education programme needs to be given priority because it shall eliminate adult illiteracy and thus help in further spread of education. So, only argument II is strong enough.

27, Answer: Option E

Explanation:

Clearly, instead of improving upon higher education, increasing the literacy rate should be heeded first. So, argument I holds. Also, more number of universities will produce more degree holders with the number of jobs remaining the same, thus increasing unemployment. So, argument II also holds strong.

28, Answer: Option B

Explanation:

Clearly, restriction on the diet of people will be denying them their basic human right. So, only argument II holds.

29, Answer: Option D

Explanation:

Clearly, ban is necessary to protect our natural environment. So, none of

the arguments is strong enough.

30, Answer: Option A

Explanation:

Closing down public-sector enterprises will definitely throw the engaged persons out of employment. So, argument I holds. Also, closing down is no solution for a loss-making enterprise. Rather, its causes of failure should be studied, analyzed and the essential reforms implemented. Even if this does not work out, the enterprise may be privatized. So, argument II is vague,

31, Answer: Option A

Explanation:

Clearly, government jobs in rural areas are underlined with several difficulties. In lieu of these, extra incentives are needed. So, only argument I holds strong.

32, Answer: Option E

Explanation:

Clearly, if there were less candidates, the voters would find it easy to make a choice. So, argument I holds. Also, every person satisfying the conditions laid down by the Constitution must be given an opportunity and should not be denied the same just to cut down the number of candidates. So, argument II also holds strong.

33, Answer: Option A

Explanation:

Clearly, the advertisements are/the means to introduce people with the product and its advantages. So, argument I holds strong. But argument II is vague because advertisements are an investment for better gain and not a, wastage.

34, Answer: Option A

Explanation:

The legislators should surely not be engaged in any other profession

because only then will they be able to work with devotion. So, argument I holds. Also, if such a law is enforced, only those people will contest elections who are really prepared to work for the country. So, argument II is vague.

35, Answer: Option B

Explanation:

Nowadays, computers have entered all walks of life and children need to be prepared for the same. So, argument II is strong. Argument I holds no relevance.

36, Answer: Option B

Explanation:

Clearly, after being in strict discipline and following a formal dress code of the school for so many years, the students must be granted some liberty in college life, as they have to take on the responsibilities of life, next. Besides, schools adopt uniforms to take care of the security of the child - an aspect which doesn't matter much in the colleges. So, argument II holds strong. Also, the environment of the college depends on the students' dedication and etiquettes and not on their uniforms. So, argument I is vague.

37, Answer: Option A

Explanation:

Clearly, peaceful settlement through mutual agreement is the best option, whatever be the issue. So, argument I holds strong. Moreover, the problem indicated in II can be curbed by constant check and vigilance. So, II seems to be vague.

38, Answer: Option B

Explanation:

Clearly, a world government cannot eliminate tensions among nations because it will also have the ruling group and the opposition group. Further, the more powerful and diplomatic shall rule the world to their interests. So, only argument II holds.

39, Answer: Option D

Explanation:

It is not necessary that any practice which has been in vogue for a long time is right and it must be continued. So, argument I is not strong. Also, a practice must be continued or discontinued in view of its merits/demerits and not on grounds of the expenditure or procedures it entails. The policy of transfer is generally practised to do away with corruption, which is absolutely essential. So, argument II also does not hold.

40, Answer: Option E

Explanation:

Both the arguments are strong enough. The conditions have to be agreed to, in order to save the life of the victims, though actually they ought not to be agreed to, as they encourage the sinister activities of the kidnappers.

41, Answer: Option C

Explanation:

Religion binds people together through the name of God and human values. But at the same time it may create differences and ill-will among people. So, either of the arguments holds strong.

42, Answer: Option A

Explanation:

A peace-loving nation like India can well join an international forum which seeks to bring different nations on friendly terms with each other. So, argument I holds strong. Argument II highlights a different aspect. The internal problems of a nation should not debar it from strengthening international ties. So, argument II is vague

43, Answer: Option B

Explanation:

Clearly, imposing ban on fashionable dresses will be a restriction on the

personal choice and hence the right to freedom of an individual. So, only argument II is strong.

44, Answer: Option B

Explanation:

An organization like UNO is meant to maintain peace all over and will always serve to prevent conflicts between countries. So, its role never ends. So, argument I does not hold. Also, lack of such an organization may in future lead to increased mutual conflicts and international wars, on account of lack of a common platform for mutual discussions. So, argument II holds.

45, Answer: Option A

Explanation:

Clearly, besides interview, there can be other modes of written examination to judge candidates' motives. So argument II is not strong enough. However, the interview is a subjective assessment without doubt. So, argument I holds.

46, Answer: Option E

Explanation:

Family planning is an essential step to curb population growth. So, argument I holds strong. Also, family planning being against the tenets of some of the Indian religions, it is not necessary to make it compulsory. Instead, it can be enforced by creating public awareness of the benefits of family planning. So, argument II also holds.

47, Answer: Option B

Explanation:

Income -tax is levied so that every citizen can contribute a share of his earning towards the infrastructural development of the nation. So, argument I seems to be vague. However, income-tax is no doubt a good source of revenue for the government. Hence, argument II holds strong.

48, Answer: Option E

**Explanation:**

In the absence of such a ceiling, the companies would be involved in a mutual competition of salaries, in a bid to attract the most competent professionals. So, argument I holds. Also, the prospects of increase in salary would encourage the officials to perform better in the interest of the company they serve, which would otherwise not be so if a ceiling is imposed. So, argument II also holds strong.

49, Answer: Option B

**Explanation:**

Making education free for all is not the only means to ensure literacy. An awareness needs to be aroused for this. So, argument I is vague. Also, such a step would require immense funds and lead to financial drain. So, argument II holds.

50, Answer: Option B

**Explanation:**

Abolishing the import duty on electronic goods shall reduce the costs of imported goods and adversely affect the sale of the domestic products, thus giving a setback to the Indian electronics industry. So, argument II holds strong. Argument I does not provide a convincing reason.

51, Answer: Option D

**Explanation:**

Taking care of the parents is a moral duty of the children and cannot be thrust upon them legally, nor such a compulsion can ensure good care of the old people. So, none of the arguments holds strong.

52, Answer: Option D

**Explanation:**

The Government has already made provisions for reservation of jobs for the economically backward sections, which is a must. So, abolishing the practice of reservation altogether has no meaning. Thus, argument I is vague. Also, more reservations would lead to non-recruitment of many more deserving candidates. Besides, such a reservation, if implemented,

will cater to the job requirements of only a small section of population and not a major part of it. So, argument II also does not hold strong.

53, Answer: Option A

Explanation:

Clearly, higher education is not the cause of unemployment. In fact, it has created greater job opportunities. So, argument II is vague. Also, higher education promotes the country's development. So, argument I holds.

54, Answer: Option D

Explanation:

The Public Distribution System is indeed necessary to provide basic amenities to the economically backward sections of population. So, argument I is vague. Also, if the Objectives of a system are not fulfilled because of corruption, then getting rid of the system is no solution. Instead, efforts should be made to end corruption and extend its benefits to the people for whom it is meant. So, argument II also does not hold,

55, Answer: Option D

Explanation:

Clearly, India needs to have military force to defend itself against the threat of other military powers in the world. So, none of the arguments holds strong.

## Logical Reasoning 2:: Logical Deduction Test

TIME: 55 MINUTES

### *Directions to Solve*

*In each question below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.*

Give answer:

- (A) If only conclusion I follows
- (B) If only conclusion II follows
- (C) If either I or II follows
- (D) If neither I nor II follows and
- (E) If both I and II follow.

1. Statements: No women teacher can play. Some women teachers are athletes.

Conclusions:

1. Male athletes can play.
  2. Some athletes can play.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

2. Statements: All bags are cakes. All lamps are cakes.

Conclusions:

1. Some lamps are bags.

2. No lamp is bag.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

3. Statements: All mangoes are golden in colour. No golden-coloured things are cheap.

Conclusions:

1. All mangoes are cheap.

2. Golden-coloured mangoes are not cheap.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

4. Statements: Some kings are queens. All queens are beautiful.

Conclusions:

1. All kings are beautiful.

2. All queens are kings.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

5. Statements: Some doctors are fools. Some fools are rich.

Conclusions:

1. Some doctors are rich

2. Some rich are doctors.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

6. Statements: All roads are waters. Some waters are boats.

Conclusions:

1. Some boats are roads.

2. All waters are boats.

- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

7. Statements: No bat is ball. No ball is wicket.

Conclusions:

- 1. No bat is wicket.
  - 2. All wickets are bats.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

8. Statements: All flowers are trees. No fruit is tree.

Conclusions:

- 1. No fruit is flower.
  - 2. Some trees are flowers.
- A. Only conclusion I follows
  - B. Only conclusion II follows

- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

9. Statements: Every minister is a student. Every student is inexperienced.

Conclusions:

- 1. Every minister is inexperienced.
  - 2. Some inexperienced are students.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

10. Statements: All roads are poles. No pole is a house.

Conclusions:

- 1. Some roads are houses.
  - 2. Some houses are poles.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows

E. Both I and II follow

11. Statements: All fish are tortoise. No tortoise is a crocodile.

Conclusions:

1. No crocodile is a fish.
  2. No fish is a crocodile.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

12. Statements: Some dedicated souls are angels. All social workers are angels.

Conclusions:

1. Some dedicated souls are social workers.
  2. Some social workers are dedicated souls.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

13. Statements: No gentleman is poor. All gentlemen are rich.

Conclusions:

1. No poor man is rich.
  2. No rich man is poor.
- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

14. Statements: Some swords are sharp. All swords are rusty

Conclusions:

1. Some rusty things are sharp.
  2. Some rusty things are not sharp.
- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

15.. Statements: All fishes are grey in colour. Some fishes are heavy.

Conclusions:

1. All heavy fishes are grey in colour.
  2. All light fishes are not grey in colour.
- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

16. Statements: All good athletes win. All good athletes eat well.

Conclusions:

1. All those who eat well are good athletes.
  2. All those who win eat well.
- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

17. Statements: All film stars are playback singers. All film directors are film stars.

Conclusions:

1. All film directors are playback singers.
  2. Some film stars are film directors.
    - A. Only conclusion I follows
    - B. Only conclusion II follows
    - C. Either I or II follows
    - D. Neither I nor II follows
    - E. Both I and II follow
18. Statements: All hill stations have a sun-set point. X is a hill station.
- Conclusions:
1. X has a sun-set point.
  2. Places other than hill stations do not have sun-set points.
19. Statements: Some dreams are nights. Some nights are days.
- Conclusions:
1. All days are either nights or dreams.
  2. Some days are nights.
    - A. Only conclusion I follows
    - B. Only conclusion II follows
    - C. Either I or II follows
    - D. Neither I nor II follows
    - E. Both I and II follow

20. Statements: All jungles are tigers. Some tigers are horses.

Conclusions:

1. Some horses are jungles.

2. No horse is jungle.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

21. Statements: All poles are guns. Some boats are not poles.

Conclusions:

1. All guns are boats.

2. Some boats are not guns.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

22. Statements: Many scooters are trucks. All trucks are trains.

Conclusions:

1. Some scooters are trains.

2. No truck is a scooter.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

23. Statements: Some papers are pens. Angle is a paper.

Conclusions:

1. Angle is not a pen.

2. Angle is a pen.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

24. Statements: All birds are tall. Some tall are hens.

Conclusions:

1. Some birds are hens.

2. Some hens are tall.

- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

25. Statements: Some papers are pens. Some pencils are pens.

Conclusions:

- 1. Some pens are pencils.
  - 2. Some pens are papers.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

26. Statements: Some men are educated. Educated persons prefer small families.

Conclusions:

- 1. All small families are educated.
  - 2. Some men prefer small families.
- A. Only conclusion I follows
  - B. Only conclusion II follows

- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

27. Statements: All educated people read newspapers. Rahul does not read newspaper.

Conclusions:

- 1. Rahul is not educated.
  - 2. Reading newspaper is not essential to be educated.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

28. Statements: All pens are chalks. All chairs are chalks.

Conclusions:

- 1. Some pens are chairs.
  - 2. Some chalks are pens.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows

E. Both I and II follow

29. Statements: Bureaucrats marry only intelligent girls. Tanya is very intelligent.

Conclusions:

1. Tanya will marry a bureaucrat.
  2. Tanya will not marry a bureaucrat.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

30. Statements: Some engineers are fools. Anand is an engineer.

Conclusions:

1. Some fools are engineers.
  2. Anand is a fool.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

31. Statements: All windows are doors. No door is wall.

Conclusions:

1. No window is wall.
  2. No wall is door.
- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

32. Statements: Most teachers are boys. Some boys are students.

Conclusions:

1. Some students are boys.
  2. Some teachers are students.
- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

33. Statements: No man is a donkey. Rahul is a man.

Conclusions:

1. Rahul is not a donkey.

2. All men are not Rahul.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

34. Statements: Some books are pens. No pen is pencil.

Conclusions:

1. Some books are pencils.

2. No book is pencil.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

35. Statements: All men are married. Some men are educated.

Conclusions:

1. Some married are educated.

2. Some educated are married.

- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

36. Statements: All tubes are handles. All cups are handles.

Conclusions:

- 1. All cups are tubes.
  - 2. Some handles are not cups.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

37. Statements: No magazine is cap. All caps are cameras.

Conclusions:

- 1. No camera is magazine.
  - 2. Some cameras are magazines.
- A. Only conclusion I follows
  - B. Only conclusion II follows

- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

38. Statements: All huts are mansions. All mansions are temples.

Conclusions:

- 1. Some temples are huts.
  - 2. Some temples are mansions.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

39. Statements: Some books are tables. Some tables are mirrors.

Conclusions:

- 1. Some mirrors are books.
  - 2. No book is mirror.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows

E. Both I and II follow

40. Statements: All trucks fly. Some scooters fly.

Conclusions:

1. All trucks are scooters.
  2. Some scooters do not fly.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

41. Statements: Raman is always successful. No fool is always successful.

Conclusions:

1. Raman is a fool.
  2. Raman is not a fool.
- A. Only conclusion I follows  
B. Only conclusion II follows  
C. Either I or II follows  
D. Neither I nor II follows  
E. Both I and II follow

42. Statements: Some desks are caps. No cap is red.

Conclusions:

1. Some caps are desks.

2. No desk is red.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

43. Statements: Some hens are cows. All cows are horses.

Conclusions:

1. Some horses are hens.

2. Some hens are horses.

A. Only conclusion I follows

B. Only conclusion II follows

C. Either I or II follows

D. Neither I nor II follows

E. Both I and II follow

44. Statements: All water is divine. All temples are divine.

Conclusions:

1. All water is temple.
2. All temples are water.
  - A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

45. Statements: All men are dogs. All dogs are cats.

Conclusions:

1. All men are cats.
2. All cats are men.
  - A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

46. Statements: All young scientists are open-minded. No open-minded men are superstitious.

Conclusions:

1. No scientist is superstitious.
2. No young people are superstitious.

- A. Only conclusion I follows
- B. Only conclusion II follows
- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

47. Statements: Some pastries are toffees. All toffees are chocolates.

Conclusions:

- 1. Some chocolates are toffees.
  - 2. Some toffees are not pastries.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

48. Statements: All boys are honest. Sachin is honest.

Conclusions:

- 1. Sachin is a boy.
  - 2. All honest persons are boys.
- A. Only conclusion I follows
  - B. Only conclusion II follows

- C. Either I or II follows
- D. Neither I nor II follows
- E. Both I and II follow

49. Statements: All pens are roads. All roads are houses.

Conclusions:

- 1. All houses are pens.
  - 2. Some houses are pens.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

50. Statements: All artists are smokers. Some smokers are drunkards.

Conclusions:

- 1. All smokers are artists.
  - 2. Some drunkards are not smokers.
- A. Only conclusion I follows
  - B. Only conclusion II follows
  - C. Either I or II follows
  - D. Neither I nor II follows
  - E. Both I and II follow

# **Answer & Explanation**

1, Answer: Option D

Explanation:

Since one premise is negative, the conclusion must be negative. So, neither conclusion follows.

2, Answer: Option C

Explanation:

Since the middle term 'cakes' is not distributed even once in the premises, no definite conclusion follows. However, I and II involve only the extreme terms and form a complementary pair. So, either I or II follows.

3, Answer: Option B

Explanation:

Clearly, the conclusion must be universal negative and should not contain the middle term. So, it follows that 'No mango is cheap'. Since all mangoes are golden in colour, we may substitute 'mangoes' with 'golden-coloured mangoes'. Thus, II follows.

4, Answer: Option D

Explanation:

Since one premise is particular, the conclusion must be particular. So, neither I nor II follows.

5, Answer: Option D

Explanation:

Since both the premises are particular, no definite conclusion follows.

6, Answer: Option D

Explanation:

The first premise is A type and distributes the subject. So, the middle term 'waters' which forms its predicate, is not distributed. The second premise is I type and does not distribute either subject or predicate. So, the middle term 'waters' forming its subject is not distributed. Since the middle term is not distributed even once in the premises, no definite conclusion follows.

7, Answer: Option D

Explanation:

Since both the premises are negative, no definite conclusion follows.

8, Answer: Option E

Explanation:

As discussed above, the conclusion must be universal negative and should not contain the middle term. So, it follows that 'No flower is fruit'. I is the converse of this conclusion and thus it follows. II is the converse of the first premise and so it also holds.

9, Answer: Option E

Explanation:

'Every' is equivalent to 'All'. Thus, since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, I follows. II is the converse of the second premise and thus it also holds.

10, Answer: Option D

Explanation:

Since both the premises are universal and one premise is negative, the conclusion must be universal negative. So, neither I nor II follows.

11, Answer: Option E

Explanation:

Since both the premises are universal and one premise is negative, the conclusion must be universal negative. Also, the conclusion should not contain the middle term. So, II follows; I is the converse of II and thus it also holds.

12, Answer: Option D

Explanation:

The first premise is an I type proposition. So, the middle term 'angels' forming the predicate is not distributed. The second premise is an A type proposition. So, the middle term 'angels' forming the predicate is not distributed. Since the middle term is not distributed even once in the premises, no definite conclusion follows.

13, Answer: Option D

Explanation:

The first premise is an E-type proposition, So, the middle term 'gentleman' forming the subject is distributed. The second premise is an A-type proposition. So, the middle term 'gentlemen' forming the subject is distributed. Since the middle term is distributed twice, the conclusion cannot be universal. Since one premise is negative, the conclusion must be negative. Thus, it follows that 'Some rich men are not poor'. Thus, neither I nor II follows.

14, Answer: Option A

Explanation:

Since one premise is particular, the conclusion must be particular and should not contain the middle term. So, I follows. Since both the premises are affirmative, the conclusion cannot be negative. Thus, II does not follow.

15, Answer: Option A

Explanation:

Since one premise is particular, the conclusion must be particular and should not contain the middle term. So, it follows that 'Some heavy things are grey in colour'. I is a cumulative result of this conclusion and the first premise. Thus, only I holds.

16, Answer: Option D

Explanation:

Since the middle term 'good athletes' is distributed twice in the premises, the conclusion must be particular and should not contain the middle term. So it follows that 'Some of those who win, eat well'.

17, Answer: Option E

Explanation:

Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, I follows. II is the converse of the second premise and so it also holds.

18, Answer: Option A

Explanation:

Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, only I follows

19, Answer: Option B

Explanation:

Since both the premises are particular, no definite conclusion follows. However, II is the converse of the second premise and thus it holds

20, Answer: Option C

Explanation:

Since the middle term 'tigers' is not distributed even once in the premises, no definite conclusion follows. However, I and II involve only the extreme terms and form a complementary pair. So, either I or II

follows.

21, Answer: Option D

Explanation:

Clearly, the term 'guns' is distributed in both the conclusions without being distributed in any of the premises. So, neither conclusion follows.

22, Answer: Option A

Explanation:

Since the first premise is particular, the conclusion must be particular and should not contain the middle term. Thus, only I follows.

23, Answer: Option C

Explanation:

Since the middle term 'papers' is not distributed even once in the premises, no definite conclusion follows. However, I and II involve only the extreme terms and form a complementary pair. Thus, either I or II follows.

24, Answer: Option B

Explanation:

Since the middle term 'tall' is not distributed even once in the premises, no definite conclusion follows. However, II is the converse of the second premise and so it holds.

25, Answer: Option E

Explanation:

Since both premises are particular, no definite conclusion follows. However, I is the converse of second premise, while II is the converse of the first premise. So, both of them hold.

26, Answer: Option B

Explanation:

Since one premise is particular, the conclusion must be particular and should not contain the middle term. Thus, only II follows.

27, Answer: Option A

Explanation:

Since both the premises are universal and one premise is negative, the conclusion must be universal negative and should not contain the middle term. So, only I follows

28, Answer: Option B

Explanation:

Since the middle term 'chalks' is not distributed even once in the premises, no definite conclusion follows. However, II is the converse of the first premise and so it holds.

29, Answer: Option C

Explanation:

The data does not mention whether all intelligent girls are married to bureaucrats. So, either I or II may follow

30, Answer: Option A

Explanation:

Since the middle term 'engineer' is not distributed even once in the premises, no definite conclusion follows. However, I is the converse of the first premise and thus it holds.

31, Answer: Option E

Explanation:

Since both the premises are universal and one premise is negative, the conclusion must be universal negative. Also, the conclusion should not contain the middle term. So, I follows. However, II is the converse of the second premise and thus it also holds,

32, Answer: Option A

Explanation:

Since both the premises are particular, no definite conclusion follows. However, I is the converse of the second premise and thus it holds.

33, Answer: Option A

Explanation:

Since one premise is negative, the conclusion must be negative. Conclusion II cannot follow as it contains the middle term. So, only I follows.

34, Answer: Option C

Explanation:

As discussed above, the conclusion must be particular negative and should not contain the middle term. So, it follows that 'Some books are not pencils'. However, I and II involve only the extreme terms and form a complementary pair. Thus, either I or II follows.

35, Answer: Option E

Explanation:

Since one premise is particular, the conclusion must be particular and should not contain the middle term. So, I follows. II is the converse of I and thus it also holds.

36, Answer: Option D

Explanation:

Both the premises are A type propositions. So, in either, the middle term 'handles' forming the predicate is not distributed. Since the middle term is not distributed even once in the premises, no definite conclusion

37, Answer: Option C

Explanation:

As discussed above, the conclusion must be particular negative and

should not contain the middle term. So, it follows that 'Some cameras are not magazines'. However, I and II involve only the extreme terms and form a complementary pair. Thus, either I or II follows. n follows

38, Answer: Option E

Explanation:

As discussed above, it follows that 'All huts are temples'. I is the converse of this conclusion and so it holds. II is t39, h

39, Answer: Option C

Explanation:

Since both the premises are particular no definite conclusion follows. However, I and II involve only the extreme terms and form a complementary pair. Thus, either I or II follows. e converse of the second premise and so it also holds.

40, Answer: Option D

Explanation:

Since the middle term 'fly' is not distributed even once in the premises, no definite conclusion follows.

41, Answer: Option B

Explanation:

Since both the premises are universal and one premise is negative, the conclusion must be universal negative and should not contain the middle term. So, only II follows.

42, Answer: Option A

Explanation:

Since one premise is particular and the other premise is negative, the conclusion must be particular negative and should not contain the middle term. So, it follows that 'Some desks are not red'. However, I is the converse of the first premise and thus it holds.

43, Answer: Option E

Explanation:

Since one premise is particular, the conclusion must be particular and should not contain the middle term. So, II follows. I is the converse of II and so it also holds.

44, Answer: Option D

Explanation:

Since the middle term 'divine' is not distributed even once in the premises, no definite conclusion can be drawn.

45, Answer: Option A

Explanation:

Since both the premises are universal and affirmative, the conclusion must be universal affirmative. However, conclusion II, being an A-type proposition, distributes the term 'cats'.

Since the term 'cats' is distributed in II without being distributed in any of the premises, so conclusion II cannot follow. Thus, only I follows.

46, Answer: Option D

Explanation:

The subject in both the conclusions is vague. The true conclusion is 'No young scientist is superstitious'. Thus, neither I nor II follows,

47, Answer: Option A

Explanation:

Since one premise is particular, the conclusion must be particular and should not contain the middle term. Thus, it follows that 'Some pastries are chocolates', I is the converse of the second premise and so it holds. Since both the premises are affirmative, the conclusion cannot be negative. Thus, II does not follow.

48, Answer: Option D

Explanation:

Both the premises are A type propositions. So, the middle term 'honest' forming the predicate in each is not distributed in either. Since the middle term is not distributed even once, no definite conclusion follows.

49, Answer: Option Bs

Explanation:

Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, it follows that 'All pens are houses'. II is the converse of this conclusion and so it holds. Since the term 'houses' is distributed in I without being distributed in any of the premises, so I does not follow.

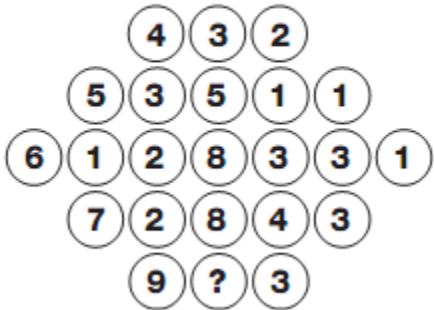
50, Answer: Option D

Explanation:

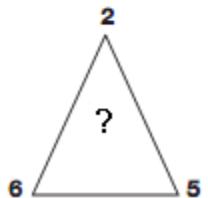
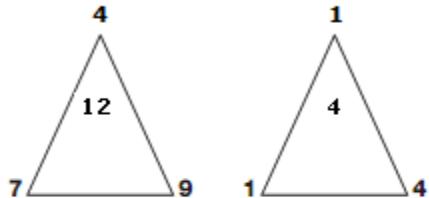
Since the middle term 'smokers' is not distributed even once in the premises, no definite conclusion follows.

# Puzzles :: Number puzzles Test

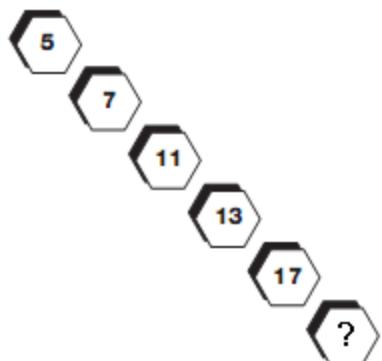
What number comes inside the circle?



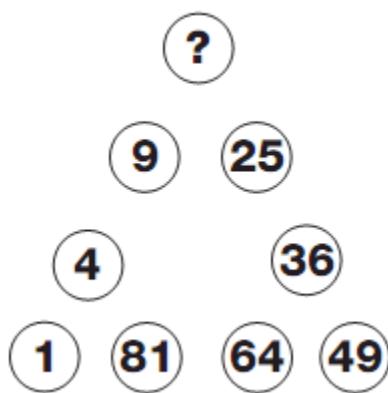
Which number replaces the question mark?



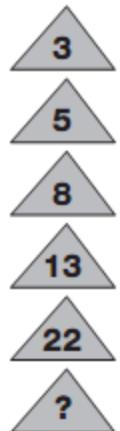
Which number completes the puzzle?



Which number replaces the question mark?



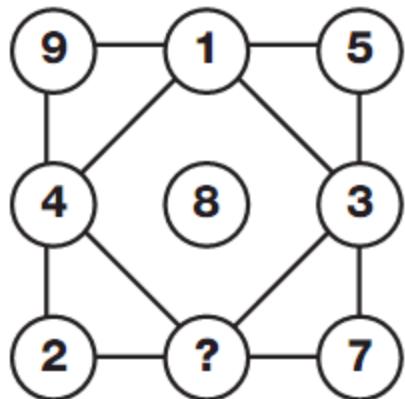
Which number replaces the question mark?



Which number replaces the question mark?

7	3	6	2
2	8	5	4
1	1	2	4
4	2	1	?

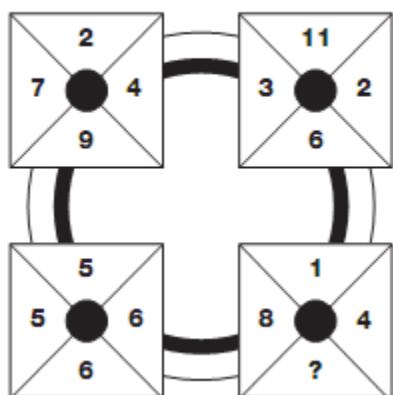
Which letter replaces the question mark?



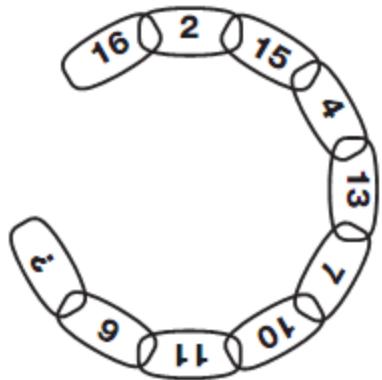
What is missing from the hexagon?



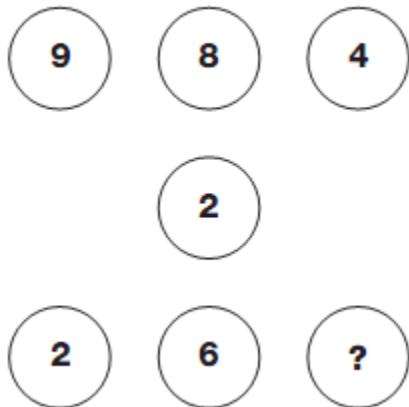
Which number replaces the question mark?



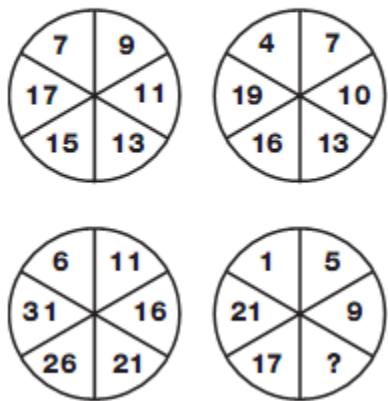
Which number replaces the question mark?



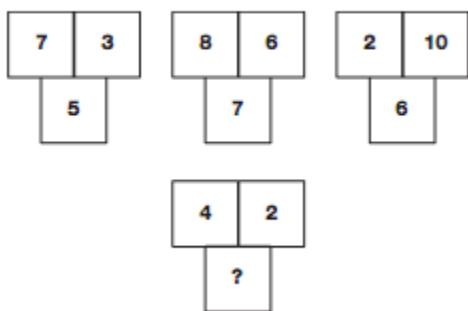
Which number replaces the question mark?



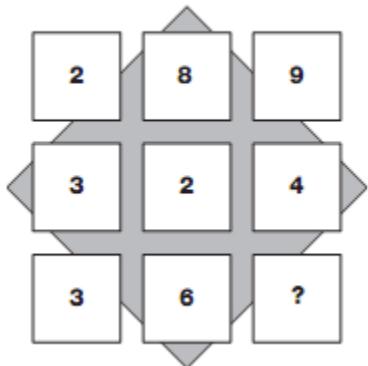
Which number replaces the question mark?



Which number replaces the question mark?



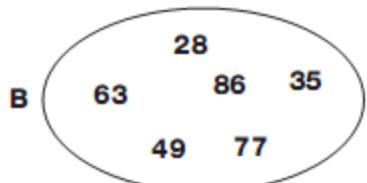
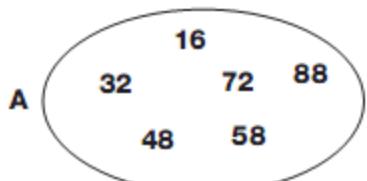
Which number replaces the question mark?



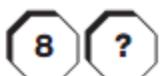
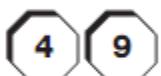
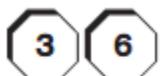
Which number replaces the question mark?



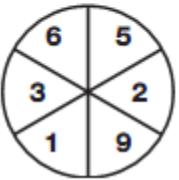
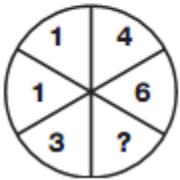
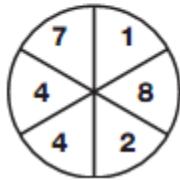
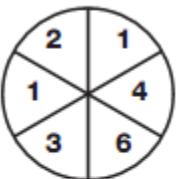
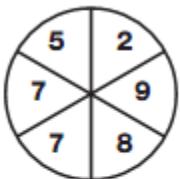
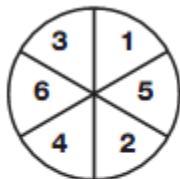
Which number is the odd one out in each oval?



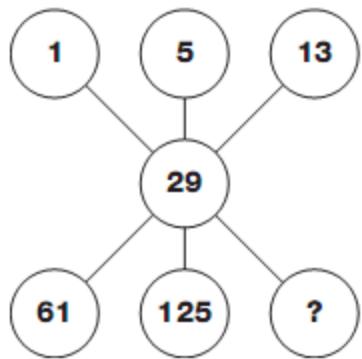
Which number replaces the question mark?



Which number replaces the question mark?



Which number replaces the question mark?



Which number replaces the question mark?

- |   |   |    |    |   |
|---|---|----|----|---|
| 6 | 9 | 15 | 27 | ? |
|---|---|----|----|---|

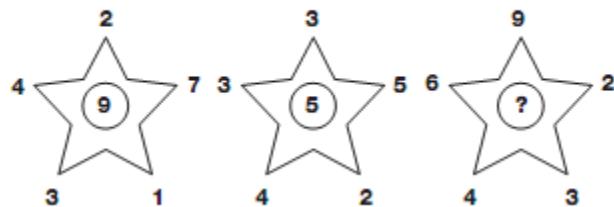
Which number replaces the question mark?

10	
8	13
16	6
4	19
22	?

Which number replaces the question mark?

3	1	4
7	2	9
1	5	?

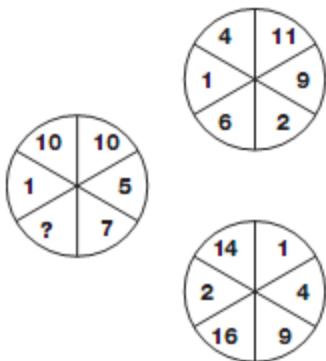
Which number replaces the question mark?



Which number replaces the question mark?

- 2
- 7
- 17
  
- 3
- 11
- 19
  
- 5
- 13
- ?

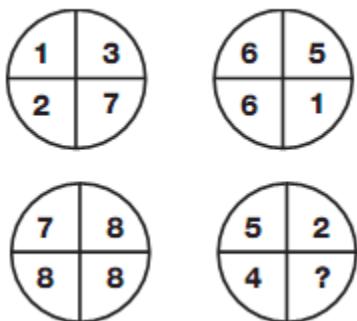
Which number replaces the question mark?



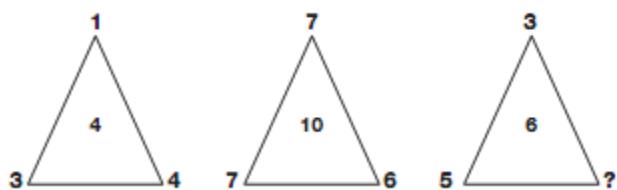
Which four digit number missing from last oval?

- 195
- 383
- 575
- 763
- 955
- ?

Which number replaces the question mark?



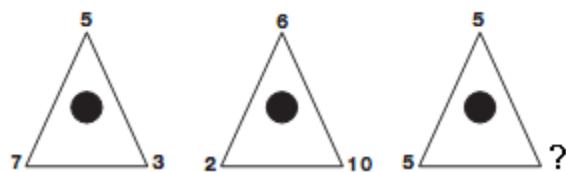
Which number replaces the question mark?



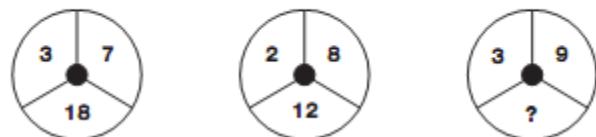
Which number replaces the question mark?



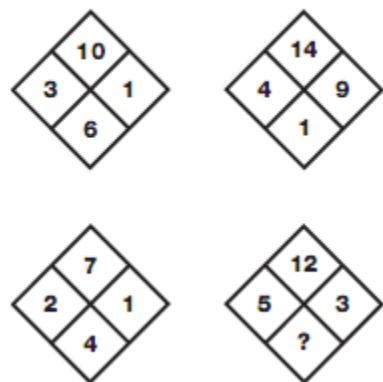
Which number replaces the question mark?



Which number replaces the question mark?

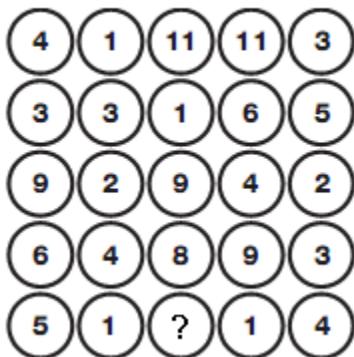


Which number replaces the question mark?



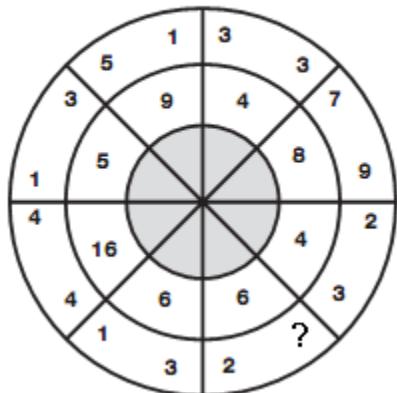
3,

Which number replaces the question mark?



4,

Which number replaces the question mark?



5,

Which number replaces the question mark?

4	2	8	7
6	3	6	6
5	1	5	3

1	0	8	8
7	1	4	2
8	7	2	9

3	2	4	8
2	1	8	9
7	4	9	7

3	0	6	2
4	1	6	4
6	3	?	5

6,

Which number replaces the question mark?

3		9
7	2	2
4		1

1		6
5	7	3
4		8

9		8
2	1	7
6		3

4		5
8	?	1
2		3

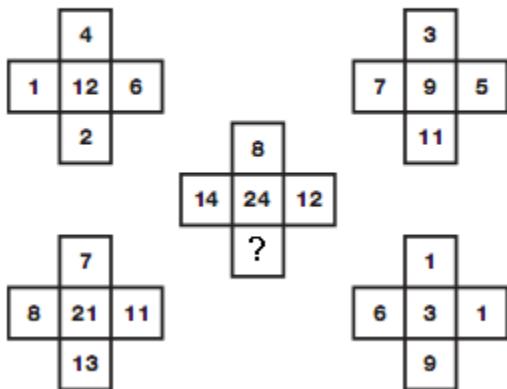
7,

Which number replaces the question mark?

1	7	9
3	6	3
5	4	2
2	7	5
2	6	?

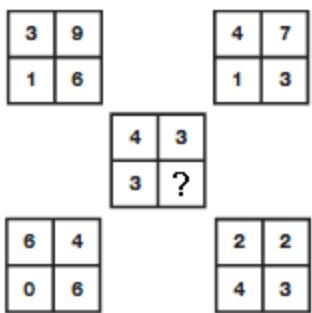
8,

Which number replaces the question mark?



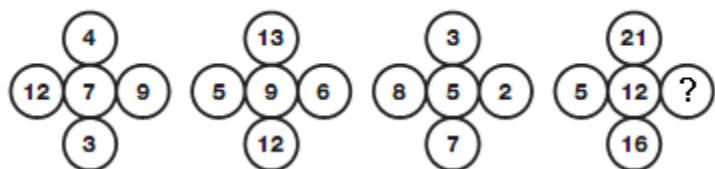
9,

Which number replaces the question mark?



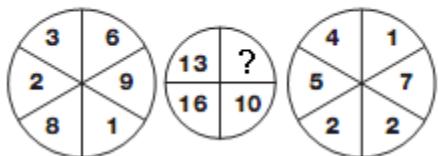
10,

Which number replaces the question mark?



11,

Which number replaces the question mark?



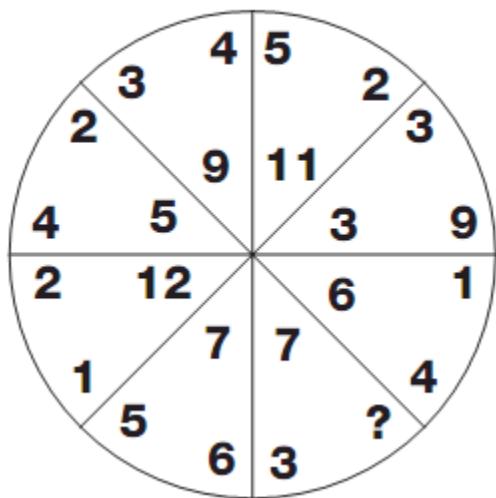
12,

Which number replaces the question mark?

3	12	6	2	7	5
15			9		
18			12		
11	4	8	8	3	4
15			11		
12			?		

13,

Which number replaces the question mark?



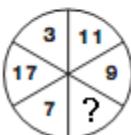
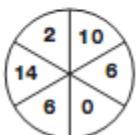
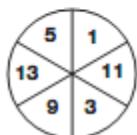
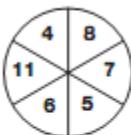
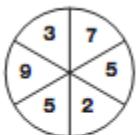
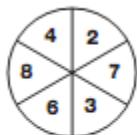
14,

Which number replaces the question mark?



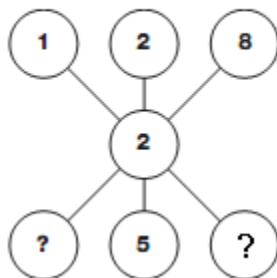
15,

Which number replaces the question mark?



16,

Which number replaces the question mark?



17,

Which number replaces the question mark?

- |    |    |    |    |   |
|----|----|----|----|---|
| 32 | 45 | 60 | 77 | ? |
|----|----|----|----|---|

18,

Which number replaces the question mark?

3	5
4	1
4	7
5	3
5	?

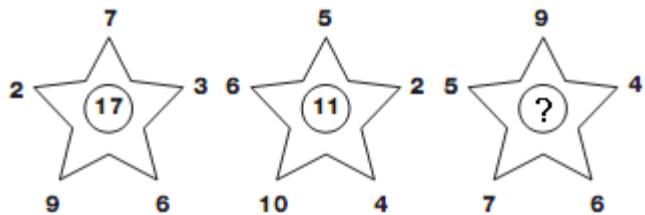
19,

Which number replaces the question mark?

- |   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 2 | 1 | 4 |
| 5 | 6 | ? |

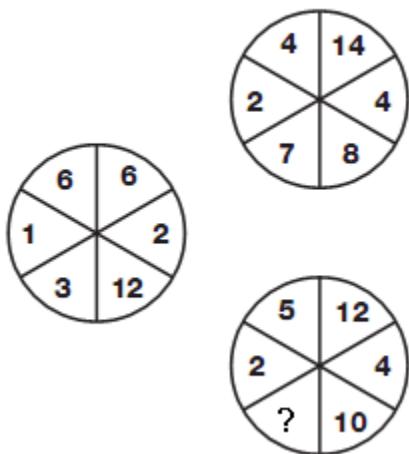
20,

Which number replaces the question mark?



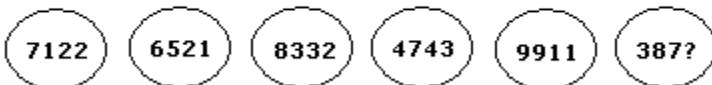
21,

Which number replaces the question mark?



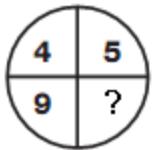
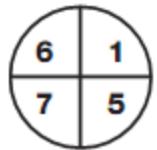
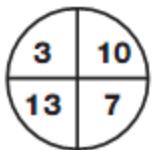
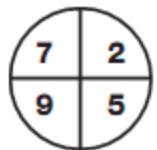
22,

Which number replaces the question mark?



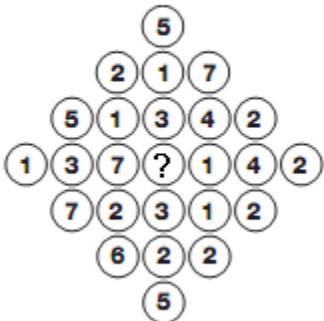
23,

Which number replaces the question mark?



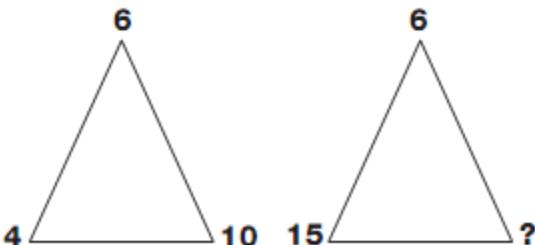
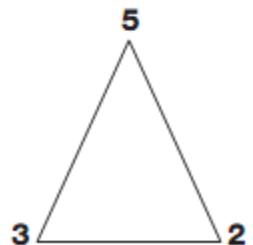
24,

Which number replaces the question mark?



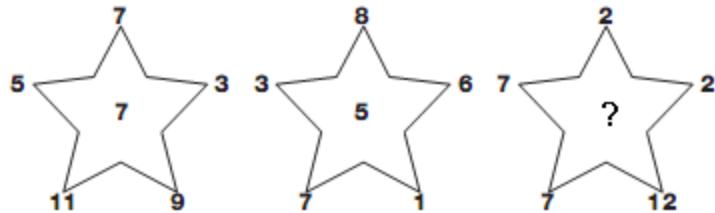
25,

Which number replaces the question mark?



26,

Which number replaces the question mark?



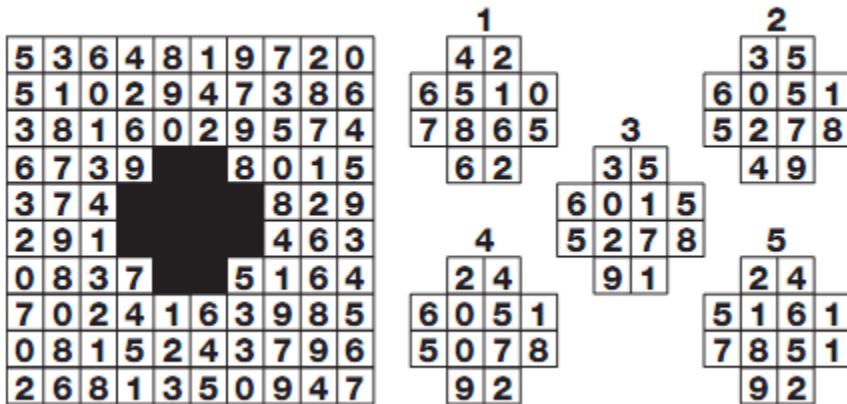
27,

Which number replaces the question mark?



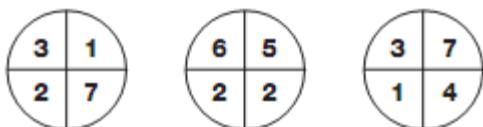
28,

Which shape complete the puzzle?



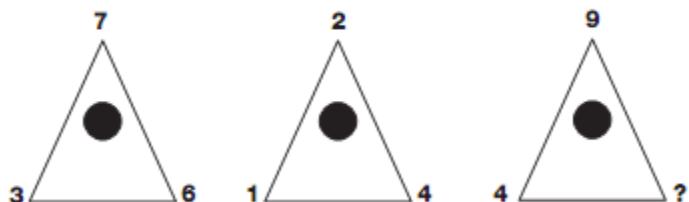
29,

Which number replaces the question mark?



30,

Which number replaces the question mark?



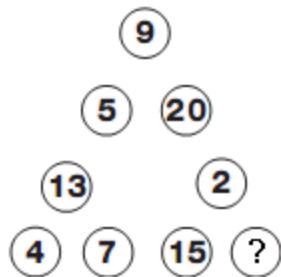
31,

Which number replaces the question mark?

- 72
- 69
- 64
- 57
- 48
- ?

32,

Which number replaces the question mark?



33,

Which number replaces the question mark?



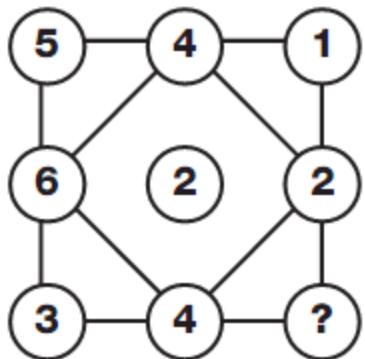
34,

Which number replaces the question mark?

2	7	3	6
4	1	4	5
6	8	8	1
1	4	0	?

35,

Which number replaces the question mark?



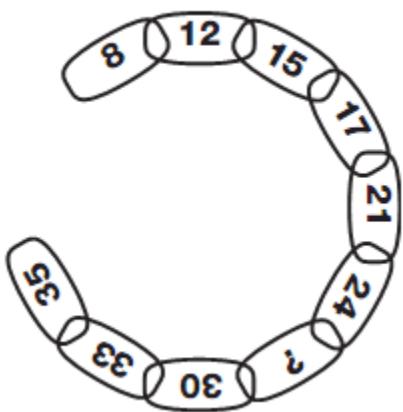
36,

Which number replaces the question mark?



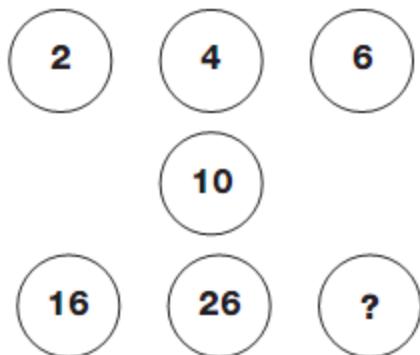
37,

Which number replaces the question mark?



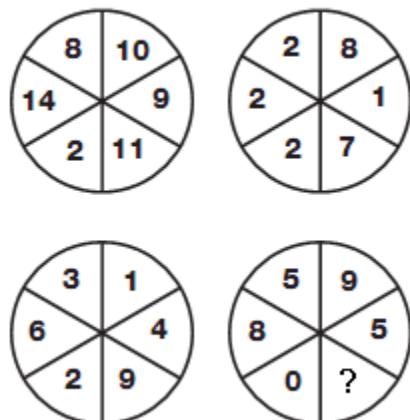
38

Which number replaces the question mark?



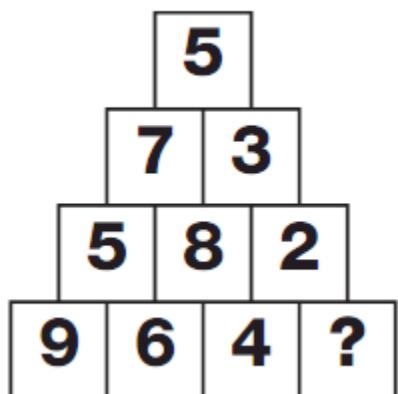
39

Which number replaces the question mark?



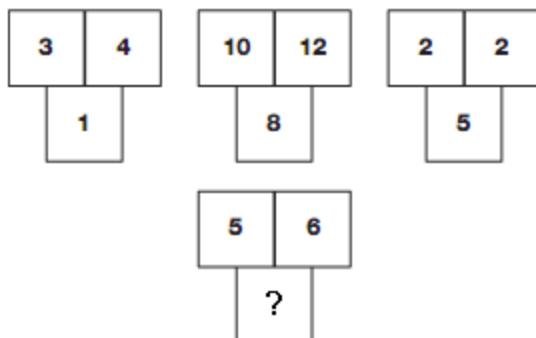
40

Which number replaces the question mark?



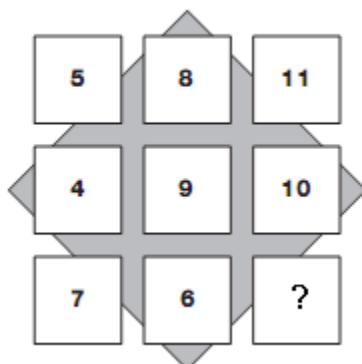
41

Which number replaces the question mark?



42

Which number replaces the question mark?



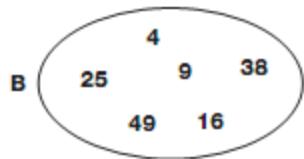
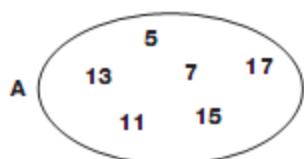
43

Which number replaces the question mark?



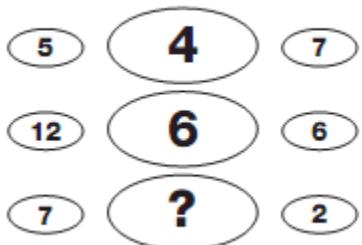
44

Which number is the odd one in each oval?



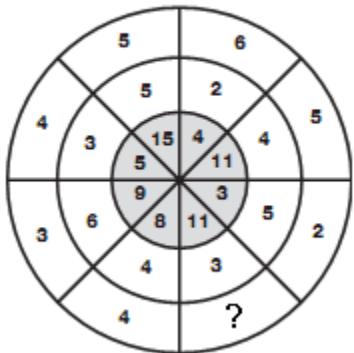
45

Which number replaces the question mark?



46

Which number replaces the question mark?



47

Which number replaces the question mark?

3	6	2	6
2	7	5	15
11	5	10	1

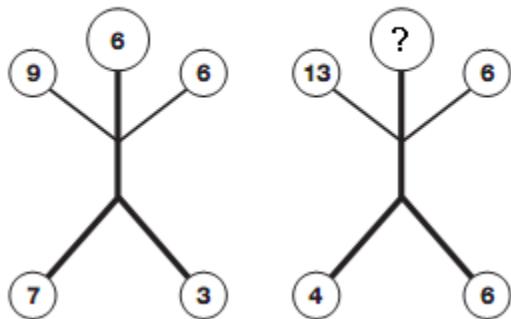
9	1	17	3
2	3	6	1
9	2	4	0

12	7	19	9
4	10	11	16
20	7	14	1

6	5	15	3
0	4	1	14
2	3	6	?

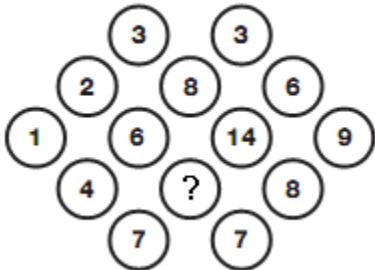
48

Which number replaces the question mark?



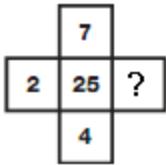
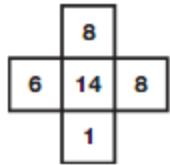
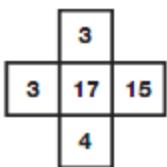
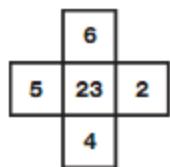
49

Which number replaces the question mark?



50

Which number replaces the question mark?



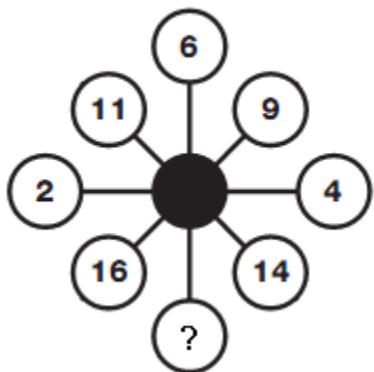
51

Which number replaces the question mark?

1	0	0	2	5	6
1	2	1	2	8	9
1	4	4	3	2	4
1	6	9	3	6	1
1	9	6	4	0	0
2	2	5	4	4	?

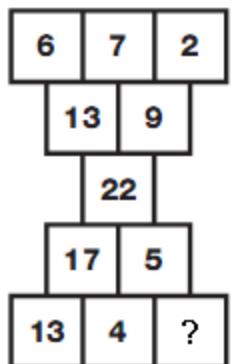
52

Which number replaces the question mark?



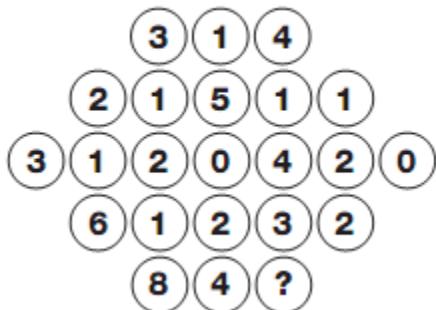
53

Which number replaces the question mark?



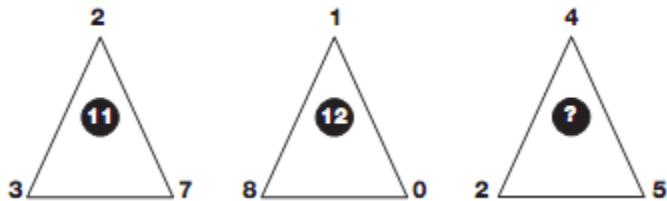
54

Which number replaces the question mark?



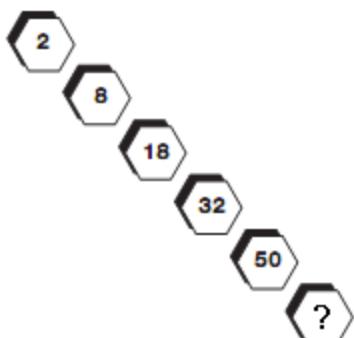
55

Which number replaces the question mark?



56

Which number replaces the question mark?



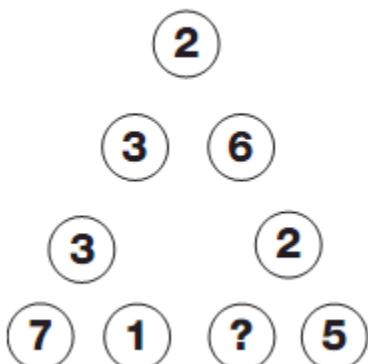
57

Which number replaces the question mark?

- |    |
|----|
| 6  |
| 8  |
| 12 |
| 20 |
| 36 |
| ?  |

58

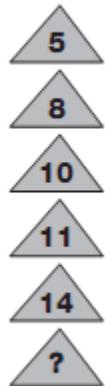
Which number replaces the question mark?



:

**59**

Which number replaces the question mark?



**60**

Which number replaces the question mark?

7	3	2	6
9	2	4	3
1	5	7	5
0	6	5	?

**ANSWERS**

**1, AnswerS : 6**

**Explanation :** Looking at the diagram in rows, the central circle equals half the sum of the numbers in the other circles to the left and right of the centre.

**2, Answer :** 9

**Explanation :** The number at the centre of each triangle equals the sum of the lower two numbers minus the top number.

**3, Answer :** 19

**Explanation :** As you move diagonally down, numbers follow the sequence of Prime Numbers.

**4, Answer :** 16

**Explanation :** Starting bottom left and moving clockwise around the triangle, numbers follow the sequence of Square Numbers.

**5, Answer :** 39

**Explanation :** Working from top to bottom, double each number and subtract 1, then 2, then 3 etc. **Answer :** 4

**Explanation :** Working in columns, the sum of the numbers in each column is always 14.

**7, Answer :** 6

**Explanation :** The numbers in each row and column add up to 15.

**8, Answer :** 40

**Explanation :** Moving from left to right, numbers increase by 2,3,4 and 5.

**9, Answer :** 9

**Explanation :** In each square of the diagram, the sum of the numbers is always 22.

**10, Answer :** 16

**Explanation :** Moving clockwise, around alternate segments in the chain, one sequence decreases by 1, 2, 3 and 4 each time, while the other increases by 2, 3, 4 and 5.

**11 , Answer :** 7

**Explanation :** Starting with the numbers in the top row, and following straight lines through the centre of the diagram, subtract the middle number from the top number to give the corresponding value on the bottom row.

**12, Answer :** 13

**Explanation :** In each circle, starting at the top left segment, numbers increase, as you move clockwise, by 2 for the upper left circle, 3 for the upper right, 4 for the lower right and 5 for the lower left.

**13 Answer :** 3

**Explanation :** In each group of 3 numbers, the lower number equals the average of the top two numbers.

**14, Answer :** 1

**Explanation :** Reading each row as a 3 digit number, the rows follow the sequence of square numbers, from 17 to 19

**15, Answer :** 8,1

**Explanation :** Reading each row as 3 separate 2-digit numbers, the central number equals the average of the left and right hand numbers.

**16, Answer :** A:58 B:86

**Explanation :** In the first oval, all numbers are multiples of 8, and in the second, they are all multiples of 7,

**17, Answer :** 1

**Explanation :** Reading each pair of numbers as a 2 digit number, they follow the sequence of square numbers from 6 to 9.

**18, Answer :** 7

**Explanation :** Taking the top row of circles, numbers in the central circle equal the sum of the numbers in corresponding segments of the left and right hand circles. In the bottom row, numbers in the central circle equal the difference between numbers in corresponding segments of the left and right hand circles.

**19, Answer :** 253

**Explanation :** Starting at the top left, and moving through the diagram in a Z shape, double each number and add 3 to give the next number along.

**20, Answer : 51**

**Explanation :** Moving to the right, double each number and subtract 3 to give the next number along.

**21, Answer : 2**

**Explanation :** Starting with the 10 at the top, one set of numbers increases by 3 each time, written in alternate boxes as you move down the diagram, and the other set of numbers decreases by 2, written in the boxes remaining.

**22, Answer : 6**

**Explanation :** On each row, add the values of the left hand and central boxes to give the value in the right hand box.

**23, Answer : 10**

**Explanation :** In each star diagram, the number in the centre equals the sum of the top three numbers, subtracting the sum of the bottom two numbers.

**24, Answer : 23**

**Explanation :** Starting top left, and moving down in columns from left to right, the numbers follow the sequence of Prime Numbers from 2 to 23.

**25, Answer : 10**

**Explanation :** Numbers in the segments of the left hand circle equal the difference between numbers in corresponding segments of the two right hand circles.

**26, Answer : 1,143**

**Explanation :** Starting with the top 3 digit number, the first digit increases by 2 as you descend, from 1 to 11. The middle digit decreases by 1 each time, and the right hand digit alternates between 5 and 3.

**27, Answer : 6**

**Explanation :** Numbers in the lower left circle equal the sum of the numbers in corresponding segments of the top two circles, and numbers in the lower right circle equal the difference of the numbers in corresponding segments of the top two circles.

**28, Answer : 4**

**Explanation :** In each triangle, the central number equals the sum of the three outer numbers divided by two.

**29, Answer :** 5

**Explanation :** In each star, the central number equals the difference between the sum of the even numbers and the sum of the odd numbers from the points of the star.

**30, Answer :** 5

**Explanation :** In each triangle, the number at the apex of the triangle equals the average of the two numbers at the bottom.

**31, Answer :** 22

**Explanation :** In each circle, the lower number equals the product of the top two numbers, subtracting 3 for the left hand circle, 4 for the middle, and 5 for the right hand circle.

**32, Answer :** 4

**Explanation :** In each diamond, add the left and right hand numbers together, and subtract this sum from the top number to give the value at the bottom.

**33, Answer :** 7

**Explanation :** In each row of the diagram, the central value equals the sum of the differences between the left hand pair of numbers and the right hand pair of numbers.

**34, Answer :** 7

**Explanation :** The inner digit in each segment equals the sum of the two numbers in the outer part of the opposite segment.

**35, Answer :** 0

**Explanation :** In each row of each grid, multiply the left and right hand numbers together to give a digit value, and write this value in the two centre boxes.

**36, Answer :** 5

**Explanation :** In each H shape, the central number is equal to the difference between the sum of the 3 left hand numbers and the sum of the 3 right hand numbers.

**37, Answer :** 7

**Explanation :** Reading each row of the diagram as a series of 3 digit numbers, the centre 3 digit number equals the sum of the top 2 numbers, and the sum of the lower 2 numbers.

**38, Answer :** 22

**Explanation :** Add together values in corresponding positions of the top two crosses, and put the results in the lower left cross. Calculate the difference between values in corresponding positions of the top two crosses, and put the results in the lower right cross. Finally, add together the values in corresponding positions of the lower two crosses to give the values in the central cross.

**39, Answer :** 2

**Explanation :** Start with the top left hand box, and move around the others in a clockwise spiral towards the centre. Read each box as a pair of 2 digit numbers, one above the other. The sum of the 2 digit numbers in each box follows the sequence 55, 60, 65, 70 and 75.

**40, Answer :** 6

**Explanation :** In each group of circles, the centre number equals the average of the four surrounding numbers.

**41, Answer :** 11

**Explanation :** Split the left and right hand circles in half, vertically. The sum of the numbers in the left hand half of the left circle appears in the top left hand segment of the middle circle, and the sum of the numbers in the right hand half of the left hand circle appears in the bottom left hand segment of the middle circle. Repeat this pattern for the right hand circle.

**42, Answer :** 7

**Explanation :** In each diagram, the sum of the upper left and upper middle numbers is written in the centre box, and the sum of the upper right and upper middle numbers is written in the lower central box.

**43, Answer :** 6

**Explanation :** The number at the centre of each segment equals the sum of the numbers on the outside of the opposite segment.

**44, Answer :** 23

**Explanation :** Looking at the diagram as two columns, numbers in the left hand column increase by 5, 6, 7 etc, and numbers in the right hand column increase by 6, 7, 8 etc.

**45, Answer :** 5

**Explanation :** The numbers in the lower circles equal the numbers in corresponding segments in the upper circles multiplied by two, then subtract 3 for the left hand circle, 4 for the middle and 5 for the right hand circle.

**46, Answer :** 2

**Explanation :** The diagram represents a multiplication sum :  $128 \times 2 = 256$ .

**47, Answer :** 96

**Explanation :** Moving from left to right, numbers follow the sequence of square numbers, from 6 to 10, subtracting 4 each time.

**48, Answer :** 9

**Explanation :** Reading each pair of numbers in a row as a 2 digit number, values increase by 6 each time.

**49, Answer :** 3

**Explanation :** Reading each column as a 3 digit number, moving from left to right, the columns follow the sequence of cube numbers of 5, 6 and 7.

**50, Answer :** 13

**Explanation :** In each star, the central value equals the sum of the upper and lower digits on each star,

**51, Answer :** 6

**Explanation :** In each circle, double the numbers on the left hand side and put the result in the opposite segment on the right hand side. subtracting the sum of the left and right hand digits.

**52, Answer :** 4

**Explanation :** Adding up the digits in each oval shape, as you move down the column this total increases by 2 each time, from 12 to 22.

**53, Answer :** 1

**Explanation :** In each circle, the number in the lower left segment equals the sum of the numbers in the top two segments, and the number in the lower right circle equals the difference between the numbers in the top two segments.

**54, Answer :** 2

**Explanation :** Working in rows, the sum of numbers in each row follows the sequence 5, 10, 15, 20, 15, 10, 5.

**55, Answer :** 9

**Explanation :** Working clockwise around the 3 triangles, the sum of the outer digits in each triangle is written in the centre of the triangle one place clockwise.

**56, Answer :** 72

**Explanation :** Numbers follow the sequence of Square Numbers, from 1 to 6, multiplying each one by 2.

**57, Answer :** 68

**Explanation :** As you move down, multiply each number by 2 and subtract 4.

**58, Answer :** 2

**Explanation :** The sum of the numbers along each side of the triangle is always 15.

**59, Answer :** 16

**Explanation :** As you move downwards, numbers increase by 3, then 2, then 1, before repeating

**60, Answer :** 7

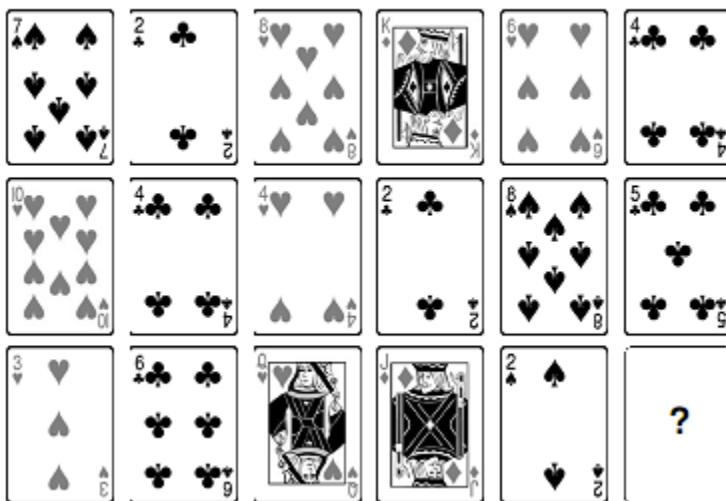
**Explanation :** The numbers in each row of the diagram add up to 18.

this pattern.

# Puzzles 2 :: Playing cards puzzles Test (Questions and Answers)

1,

Which playing card replaces the question mark?

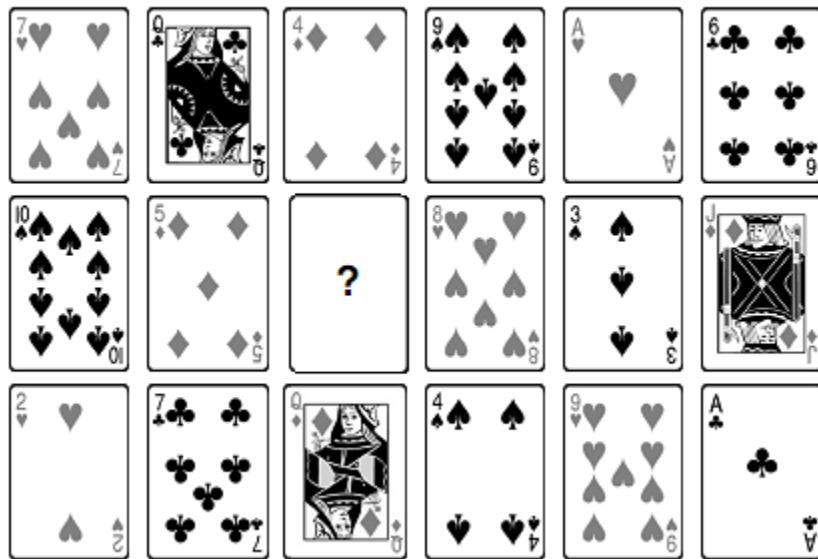


Answer : 9 of Clubss

Explanation : Taking red cards as positive values and black cards as negative values, in each column of the diagram, the lower card value equals the sum of the two upper card values. The suits are used alternately in each column.

2,

Which playing card replaces question mark?

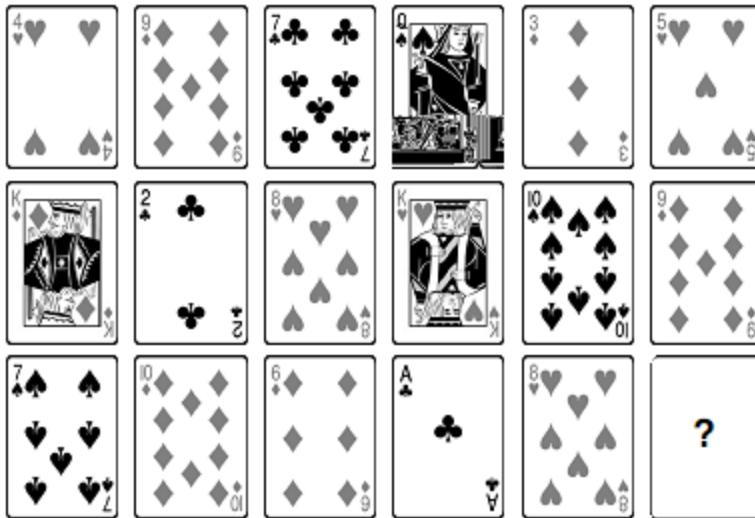


Answer : King of Clubs

Explanation : Start at the top left of the diagram and move to the right, then down one row and to the left etc. in a snakes and ladders pattern. The value of each card increases by 5 each time, with their suit following the sequence of hearts, clubs, diamonds and spades.

3,

Which playing card replaces the question mark?

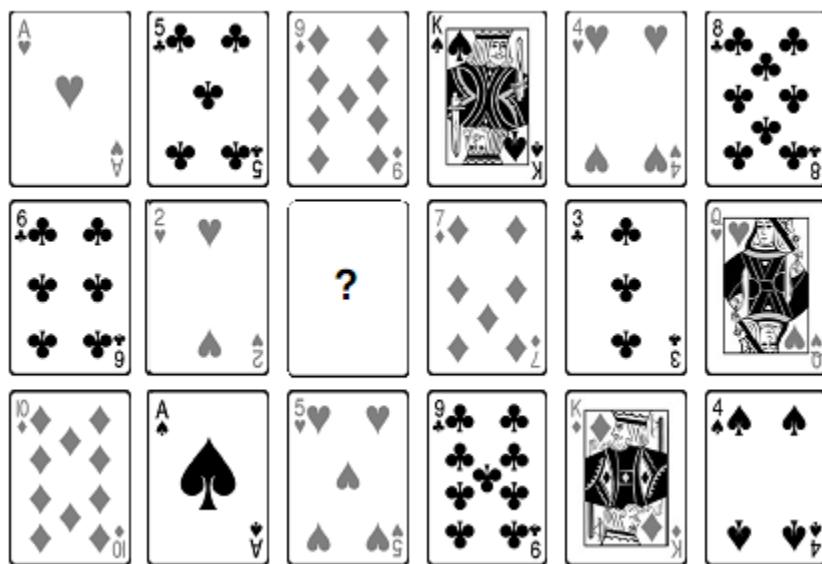


Answer : 7 (any suit)

Explanation : Taking the value of Aces as 1 and all court cards as 10, In each column of the diagram, the value of the sum of the 3 cards is always 21.

4,

Which playing card replaces the question mark?

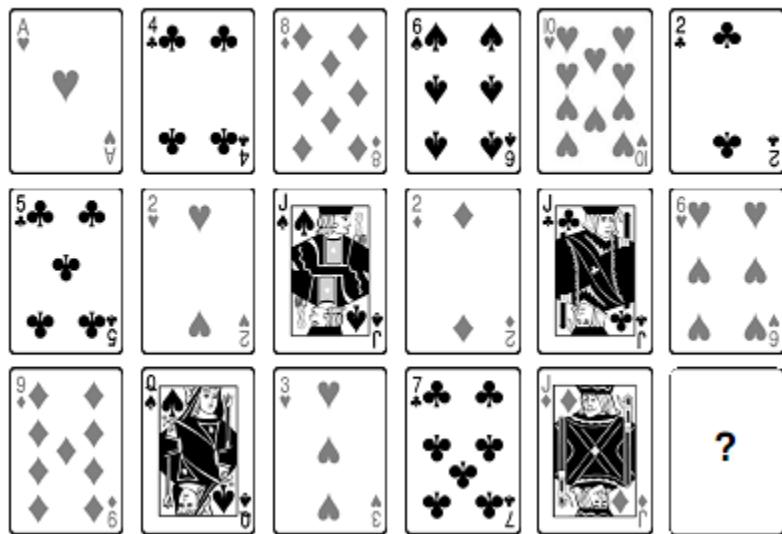


Answer : Jack of SpadeS

Explanation : There are 2 sequences in the grid - one determining the value

of the card, and one determining the suit of the card. Starting on the top left and moving right, then down one row and to the left, then down the final row and to the right, cards are arranged in order, with their value increasing by 4 each time. To calculate the suit of each card, start on the top left and move down, then right one row and move up etc. cards are arranged in the order Hearts, Clubs, Diamonds, Spades.

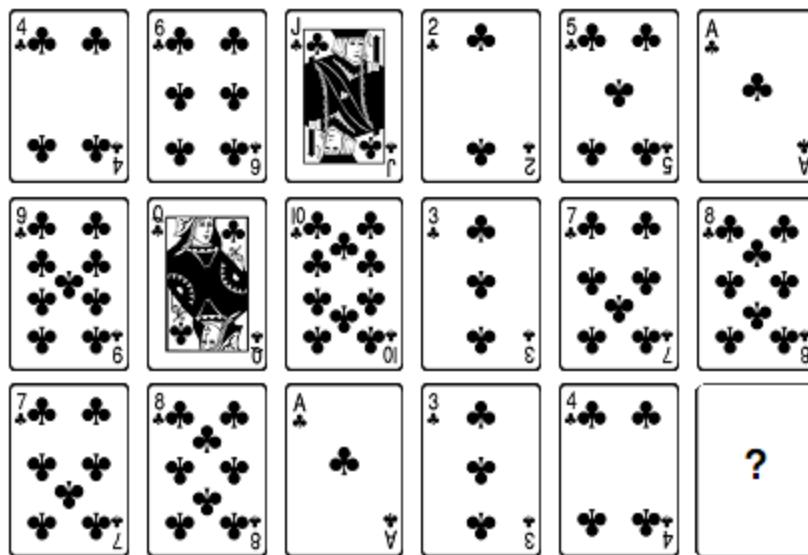
Which playing card replaces the question mark?



**Answer : 3 of SpadeS**

**Explanation :** Divide the diagram in half, vertically. In each half, start at the top left card and move to the right, then down one row and to the left, and finally to the right, in a snakes and ladders pattern. The value of the cards in the left hand half increase alternately by 3 and 4, and the value of the cards in the right hand half increase alternately by 4 and 5. To calculate the suit of each card, start at the top left of the whole diagram and move down, then to the right one space and upwards etc. in a snakes and ladders pattern. Suits are written in order, following this path, starting with Hearts, then Clubs, Diamonds and Spades.

Which playing card replaces the question mark?

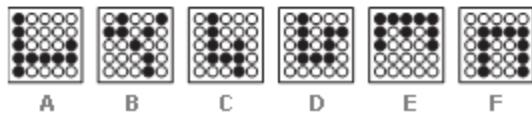
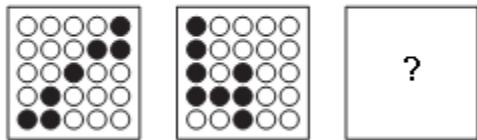
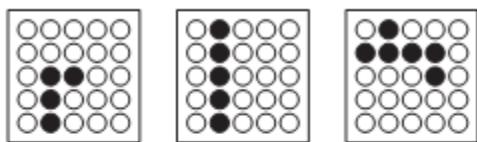


**Answer** : Nine of Clubs

**Explanation** : In each column of the diagram, add the top and bottom card values together and subtract 2 to give the value of the central card.

## Puzzles :: Logical puzzles

What is missing in the last grid?

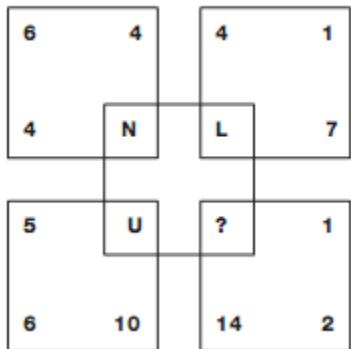


**Answer : D**

**Explanation :** The number of black dots in each grid increases by 1 each time, starting with the top left grid and working to the right, top row then bottom row.

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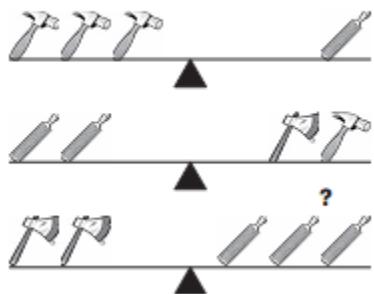
Which letter replaces the question mark?



**Answer : Q**

**Explanation :** Adding the three numbers in each square together gives the numerical value of the letter at the centre of each square.

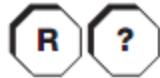
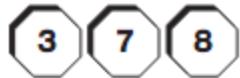
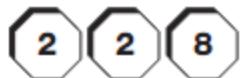
Which tool will make the last scale balance?



**Answer : Hammer**

**Explanation :** The Hammer = 1, the File = 3 and the Axe = 5

Which letter replaces the question mark?



Answer : U

Explanation : Multiply the numerical values of the letters in each pair to give the 3 digit result in the spaces above.

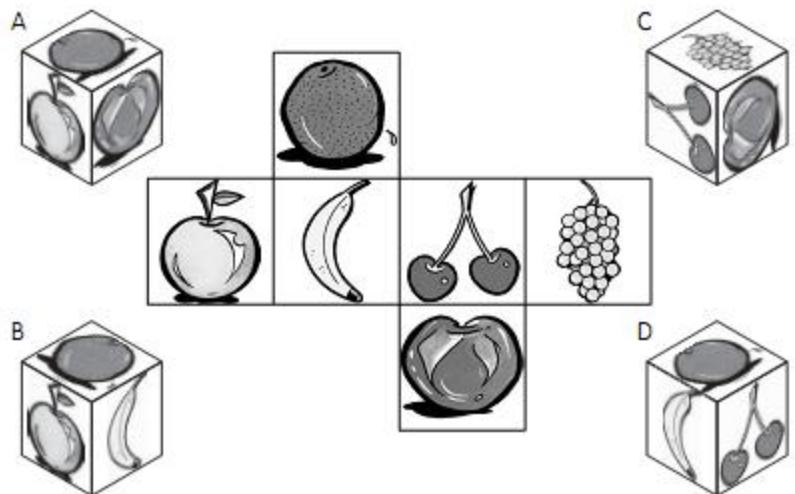
Which number replaces the question mark?

6	EJI	3
M F K		D P G
9	NRG	?

Answer : 12

Explanation : The value at each corner of the diagram equals the difference between the sums of the numerical values of the letters in the boxes adjacent to the corner.

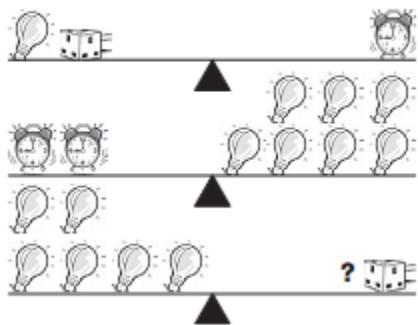
**Which picture cube does this shape make?**



**Answer** : C

**Explanation** : [NIL]

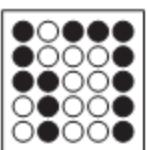
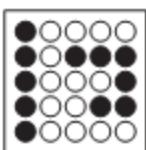
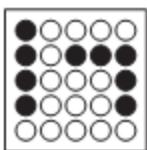
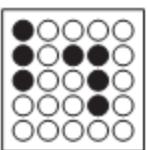
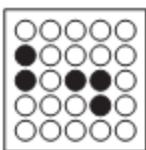
**Which symbol replaces the question mark?**



**Answer** : Alarm clock

**Explanation** : The Alarm clock = 7, the Adaptor = 5 and the Bulb = 2

Which grid replaces the question mark?



Answer : A

Explanation : Working from left to right, top row then bottom row, the first grid contains a sequence of 2 black dots and a sequence of 3. The next grid contains one of 3 and one of 4. Continue, adding 1 to each sequence every time.

Which number replaces the question mark?

6		1
L	P	D
2		4

5		1
J	M	C
2		3

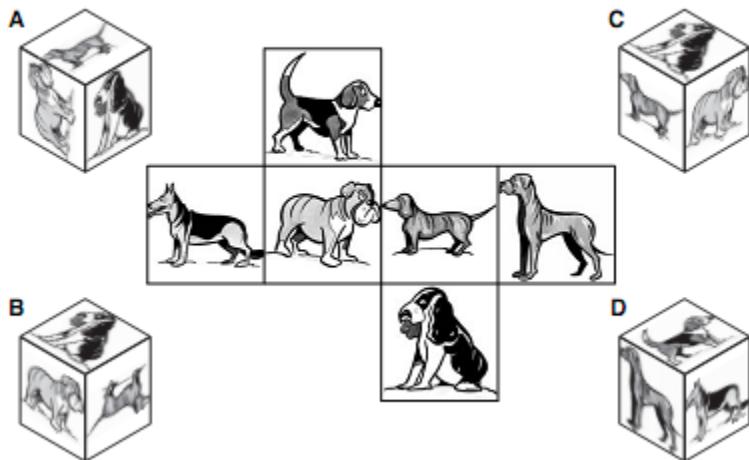
4		4
L	T	H
3		2

3		2
O	U	F
5		?

Answer : 3

Explanation : In each diagram, the numerical value of the left hand letter equals the product of the upper and lower left hand numbers, and the right hand letter equals the product of the upper and lower right hand numbers. The numerical value of the central letter equals the sum of the numerical values of the left and right hand letters.

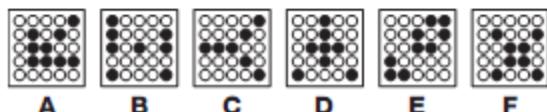
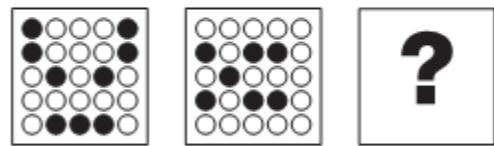
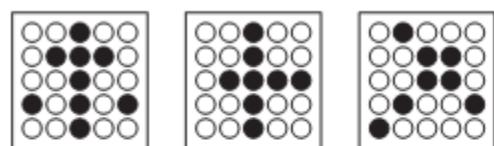
Which picture cube does this shape make?



**Answer** : A

**Explanation** : [NIL]

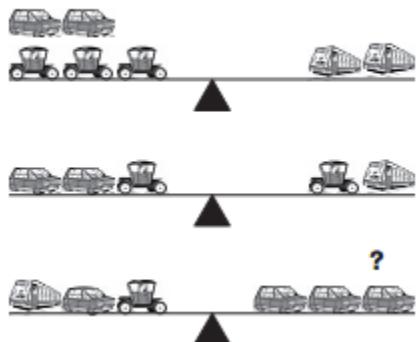
Which grid replace the question mark?



**Answer** : E

**Explanation** : In each row, the left hand grid is symmetrical around a vertical axis, the central grid is symmetrical about a horizontal axis, and the right hand grid is symmetrical about a diagonal axis, running bottom left to top right.

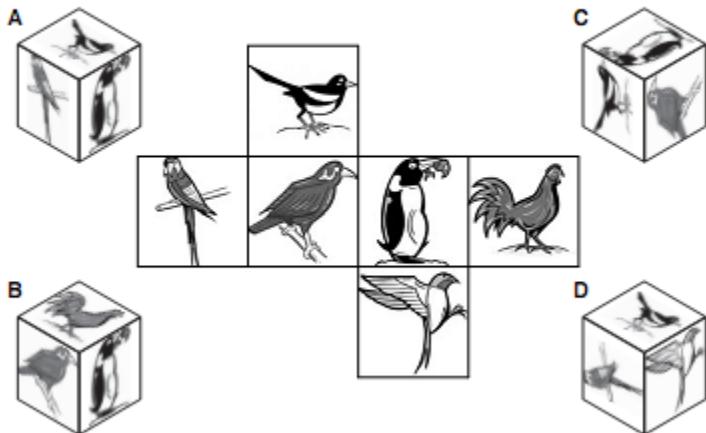
Which object is needed to make scales balance?



Answer : Carriage

Explanation : The Carriage = 2, the Car = 3 and the Bus = 6

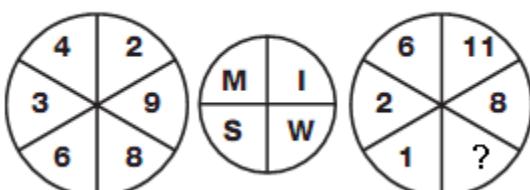
Which picture cube does this shape make?



Answer : C

Explanation : [NIL]

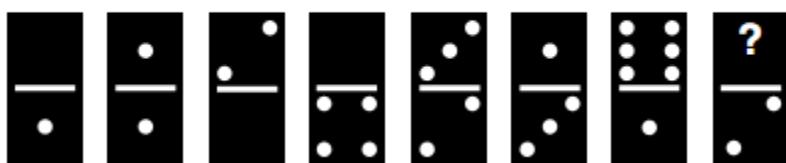
Which number replaces the question mark?



**Answer : 4**

**Explanation :** Split the left and right hand circles into 2 halves vertically. The numerical value of the letter in the upper left segment of the central circle equals the sum of the numbers in the left half of the left hand circle, and the letter in the lower left equals the sum of the numbers in the right half of the left hand circle. Repeat this pattern for the right hand circle.

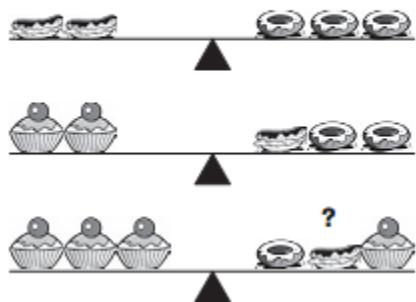
How many number of dots replaces the question mark?



**Answer : 3**

**Explanation :** Starting on the left and working to the right, take pairs of dominoes and calculate the sum of the dots they are displaying. This sum follows the sequence 3, 6, 9 and 12.

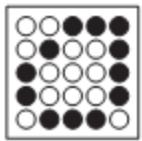
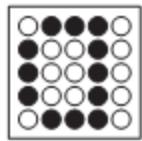
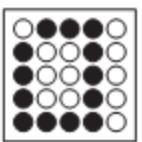
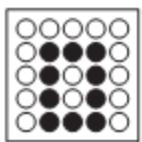
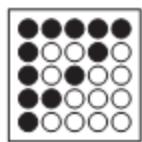
Which symbol is needed to balance the bottom scale?



**Answer : Doughnut**

**Explanation :** The Doughnut = 4, the Eclair = 6 and the Bun = 7.

Which segment replaces the question mark?



Answer : F

Explanation : In each diagram, the black circles join together to make straight sided polygons. Working from left to right, top row then bottom row, the number of sides in each polygon increases by 1 each time, from 3 to 8.

Which letter replaces the question mark?

N	252	R
T	500	Y
Y	400	P
K	132	L
G	182	?

Answer : Z

Explanation : In each row, multiply the numerical values of the left and right hand letters, putting the result in the centre.

Which letter replaces the question mark?

E	B	
9	3	6
A	H	

D	A	
9	4	3
B	C	

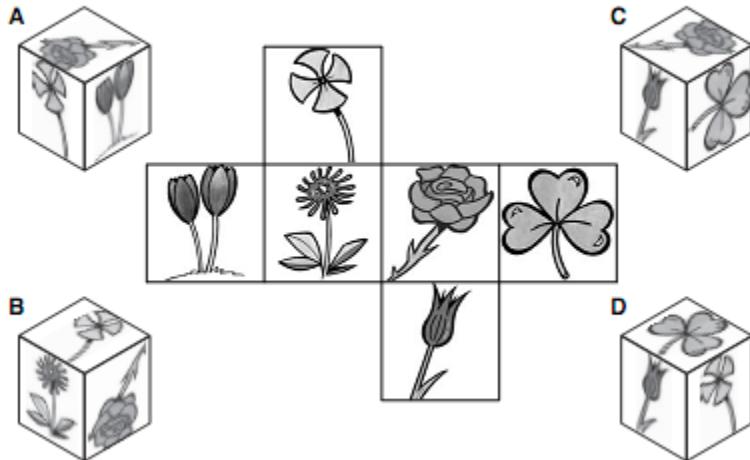
B	E	
9	7	5
C	I	

A	G	
6	1	2
C	?	

Answer : F

Explanation : In each diagram, convert each letter to its numerical value, and read the top and bottom pairs of letters as complete 2 digit values. Multiply these values together to give the 3 digit result written in the centre spaces.

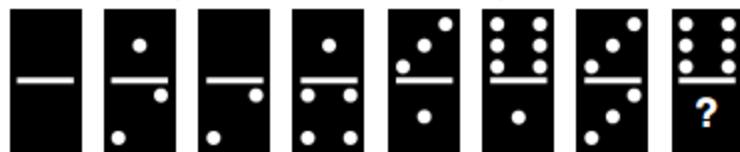
Which picture cube does this shape make?



Answer : C

Explanation : [NIL]

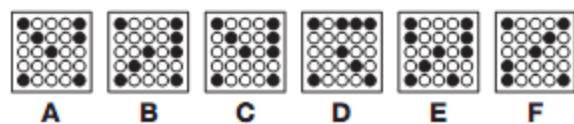
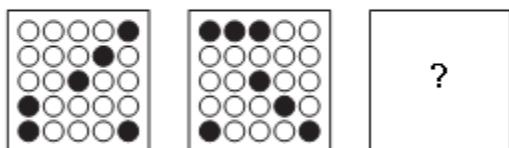
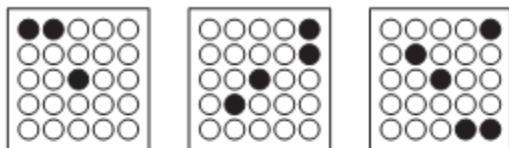
Which number replaces the question mark?



Answer : 3

Explanation : As you move from left to right, the spot total on each domino increases by 3 then decreases by 1 alternately.

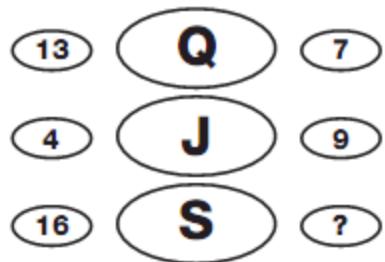
What grid replaces question mark?



Answer : B Grid

Explanation : Working in rows, left to right, top row then bottom, one black circle is added each time, with the positions of the circles moving (1/4) turn clockwise each time.

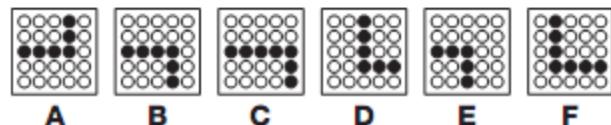
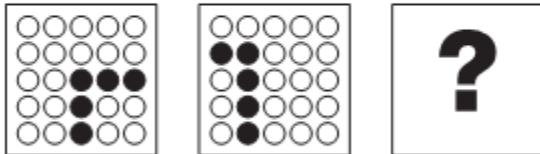
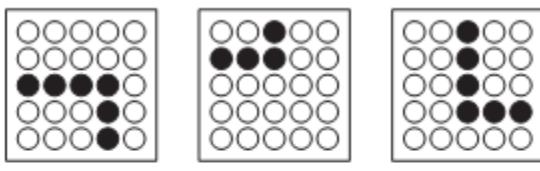
Which number replaces the question mark?



Answer : 6

Explanation : In each row of the diagram, the numerical value of the middle letter equals the sum of the left and right hand numbers, subtracting 3.

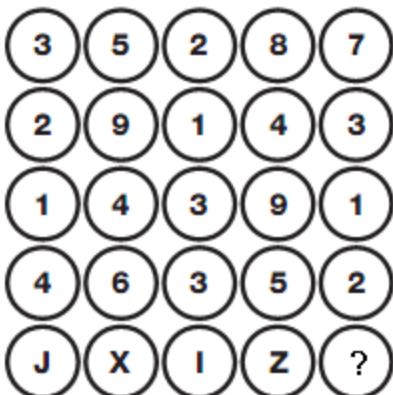
Which grid replaces the question mark?



Answer : A

Explanation : In each diagram, there are 2 lines of black dots, joining two sides together. The sides joined by the dots moves 1/4 turn clockwise as you move from left to right.

Which letter replaces the question mark?



Answer : M

Explanation : In each column, add up each number and put the letter with this sum in the bottom circle.

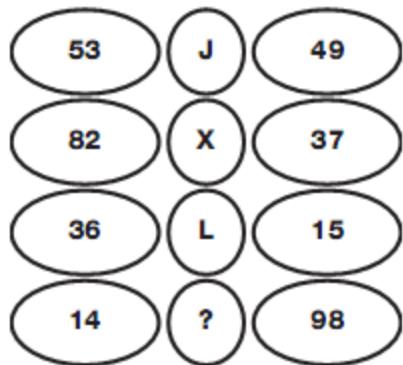
Which number replaces the question mark?

6	FKM	24
12	LUC	24
20	IRB	9
4	DGQ	24
34	PJH	?

Answer : 0

Explanation : In each row, the left hand number equals the total of the even valued letters in the middle box, and the right hand number equals the total of the odd valued letters in the middle box.

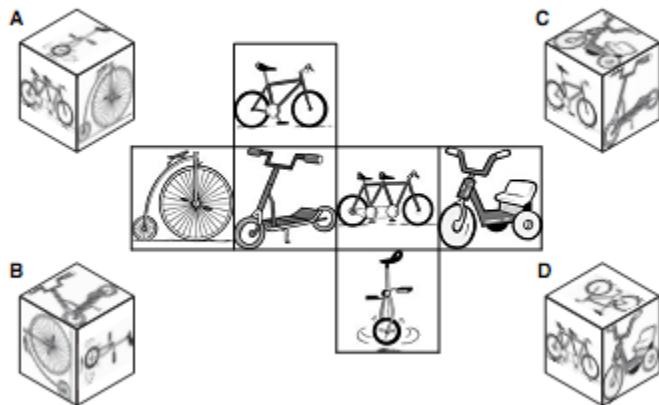
Which letter replaces the question mark?



Answer : C

Explanation : In each row, calculate the difference between the 2 numbers in the left hand column, and the 2 numbers in the right hand column. Multiply these differences together to give the numerical value of the letter in the centre.

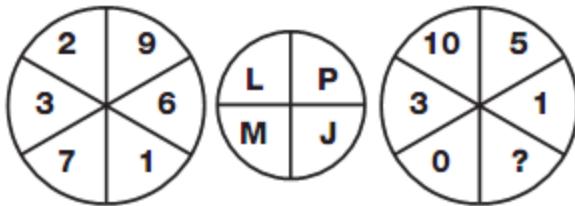
Which picture cube does this shape make?



Answer : B

Explanation : [NIL]

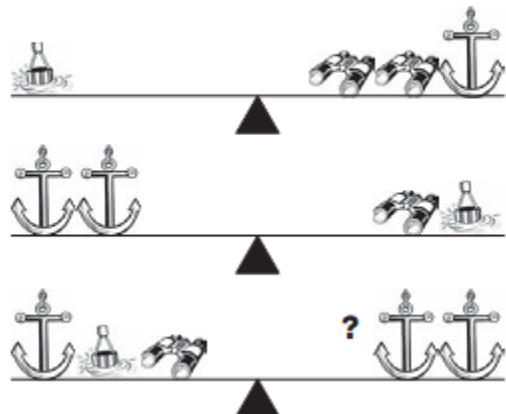
**Which number replaces the question mark?**



**Answer : 4**

**Explanation :** Split the left and right hand circles in half vertically. The letter with the numerical value of the sum of the digits in the left half of the left hand circle is placed in the top left segment of the central circle, and the letter with the numerical value of the sum of the digits in the right half of the left hand circle is placed in the top right segment of the central circle. Repeat this formula for the 2 halves of the right hand circle, putting the resulting letters in the lower segments of the central circle.

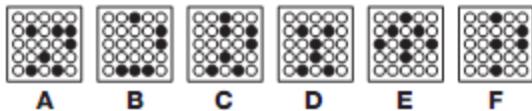
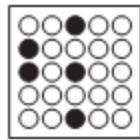
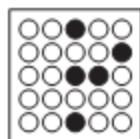
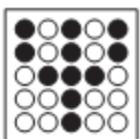
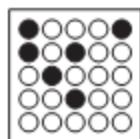
**Which symbol is needed to make the scale balance?**



**Answer : Anchor**

**Explanation :** The Binoculars = 1, the Anchor = 3 and the Buoy = 5

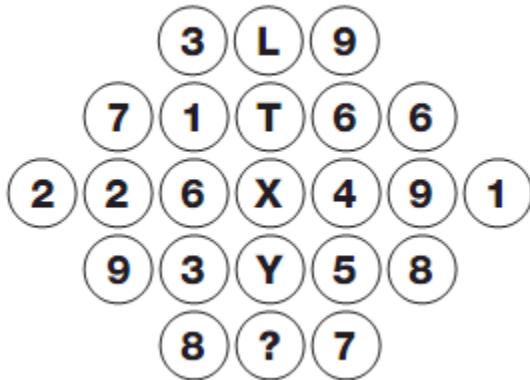
Which grid replaces the question mark?



Answer : A

Explanation : Working in rows, if you superimpose the pattern of spots in the left and right hand grids you get the pattern in the central grid.

Which letter replaces the question mark?



Answer : O

Explanation : Working in rows, add up the digits in each row and put the letter with this numerical value in the centre of the row.

Which number replaces the question mark?

3	GNQ	8
3	RBS	9
4	TUA	2
2	FPC	5
3	OLH	?

Answer : 5

Explanation : In each row, add together the numerical values of the 3 central letters to give a 2 digit sum, and put this 2 digit sum in the left and right hand boxes at the end of the rows.

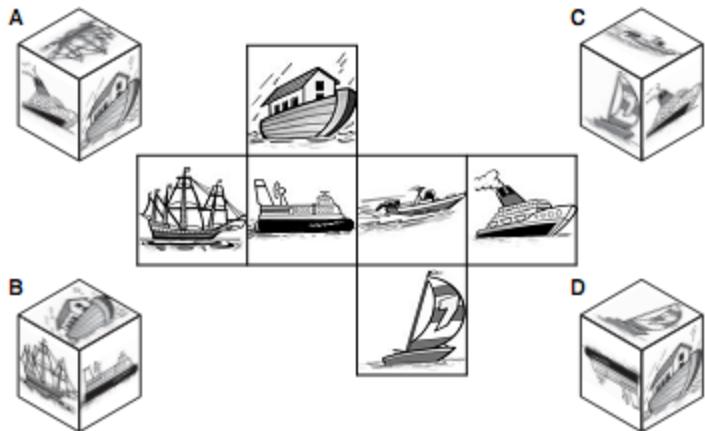
Which letter replaces the question mark?

9	L	6
3	S	5
11	G	9
4	J	13
3	?	8

Answer : P

Explanation : Working in rows, add the left and right hand numbers together, and put the letter with the reverse alphabetical value of this sum in the central box.

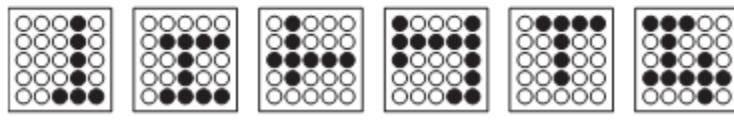
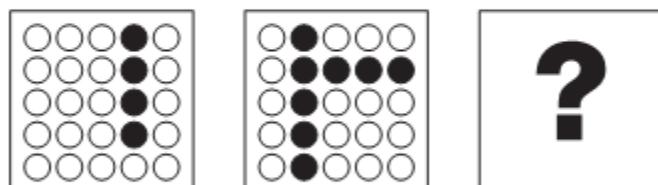
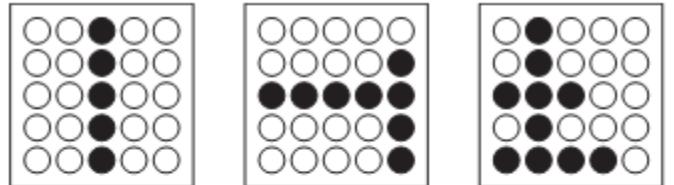
Which picture cube does this shape make?



Answer : B

Explanation : [NIL]

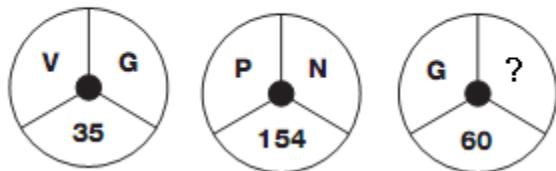
Which grid replaces the question mark?



Answer : B

Explanation : In each row, the left hand grid contains one line of black dots, the central one contains 2 lines and the right hand one contains 3 lines.

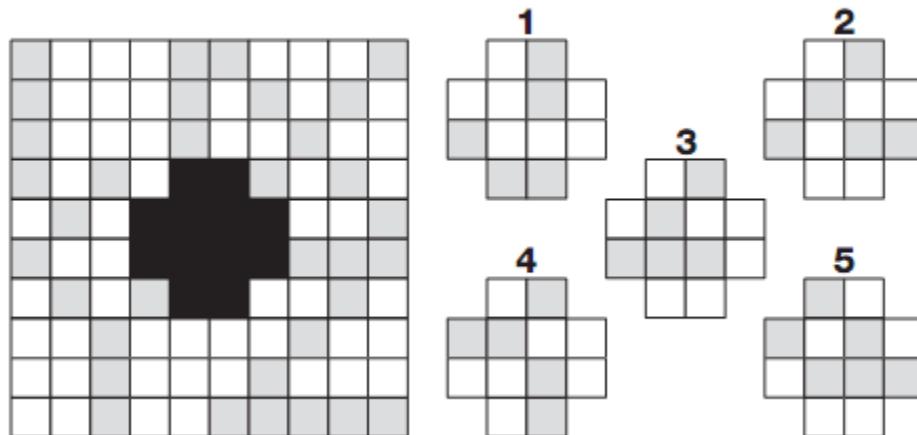
Which letter replaces the question mark?



Answer : C

Explanation : In each circle, multiply the inverse alphabetical value of the upper left hand letter by the regular alphabetical value of the upper right hand letter to give the value in the lower segment.

Which segment fills the gap to complete puzzle?



sAnswer : 5

Explanation : Splitting the diagram in half both horizontally and vertically, each quarter contains a pattern of black squares, representing the letters W, X, Y and Z.

# Mechanical Engineering Test 1

**Time:50 Minutes**

1. According to principle of conservation of energy, the total momentum of a system of masses in any direction remains constant unless acted upon by an external force in that direction.  
A.True                           B.False
2. The friction experienced by a body, when in motion, is known as  
A.rolling friction  
B.dynamic friction  
C.limiting friction  
D.static friction
3. Two balls of equal mass and of perfectly elastic material are lying on the floor. One of the ball with velocity  $v$  is made to struck the second ball. Both the balls after impact will move with a velocity  
A. $V$                                    B. $v/2$   
C. $v/4$                                    D. $v/8$
4. The term 'force' may be defined as an agent which produces or tends to produce, destroys or tends to destroy motion.  
A. Agree                           B. Disagree  
\_\_\_\_\_
5. The coefficient of restitution for elastic bodies is one.  
A.Correct                           B.Incorrect

6. The velocity ratio in case of an inclined plane inclined at angle  $\theta$  to the horizontal and weight being pulled up the inclined plane by vertical effort is

- A.  $\sin \theta$
  - B.  $\cos \theta$
  - C.  $\tan \theta$
  - D.  $\operatorname{cosec} \theta$

7. The range of projectile on a downward inclined plane is \_\_\_\_\_ the range on upward inclined plane for the same velocity of projection and angle of projection.

- A. less than
  - B. more than
  - C. equal to

8. The angle of inclination of a vehicle when moving along a circular path \_\_\_\_\_ upon its mass.

- A. Depends
  - B. does not depend

9. A body of weight  $W$  is required to move up on rough inclined plane whose angle of inclination with the horizontal is  $\alpha$ . The effort applied parallel to the plane is given by (where  $\mu = \tan\phi$  = Coefficient of friction between the plane and the body.)

- A.  $P = W \tan\alpha$   
B.  $P = W \tan(\alpha + \varphi)$   
C.  $P = W (\sin\alpha + \mu \cos\alpha)$   
D.  $P = W (\cos\alpha + \mu \sin\alpha)$

10. If the resultant of two equal forces has the same magnitude as either of the forces, then the angle between the two forces is

- A.  $30^\circ$       B.  $60^\circ$   
C.  $90^\circ$       D.  $120^\circ$

11. A smooth cylinder lying on its convex surface remains in \_\_\_\_\_ equilibrium.

- A.Stable      B.Unstable  
C.Neutral

12 Coefficient of friction is the ratio of the limiting friction to the normal reaction between the two bodies.

- . A. Yes B. No

13. Moment of inertia of a circular section about an axis perpendicular to the section is

- A.  $\pi d^3/16$  B.  $\pi d^3/32$   
C.  $\pi d^4/32$  D.  $\pi d^4/64$

14. The time of flight ( $t$ ) of a projectile on an upward inclined plane is (where  $u$  = Velocity of projection,  $\alpha$  = Angle of projection, and  $\beta$  = Inclination of the plane with the horizontal.)

- A.  $t = \frac{g \cos\beta}{2u \sin(\alpha - \beta)}$   
B.  $t = \frac{2u \sin(\alpha - \beta)}{g \cos\beta}$   
C.  $t = \frac{g \cos\beta}{2u \sin(\alpha + \beta)}$   
D.  $t = \frac{2u \sin(\alpha + \beta)}{g \cos\beta}$

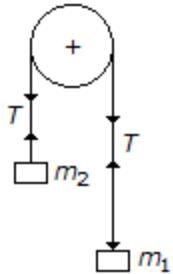
15. The unit of angular acceleration is

- A. N-m B. m/s  
C. m/s<sup>2</sup> D. rad/s<sup>2</sup>

16. Moment of inertia of a triangular section of base ( $b$ ) and height ( $h$ ) about an axis passing through its C.G. and parallel to the base, is

- A.  $bh^3/4$  B.  $bh^3/8$   
C.  $bh^3/12$  D.  $bh^3/36$

17. If the masses of both the bodies, as shown in the below figure, are reduced to 50 percent, then tension in the string will be



- A. same  
C. double

B. Half

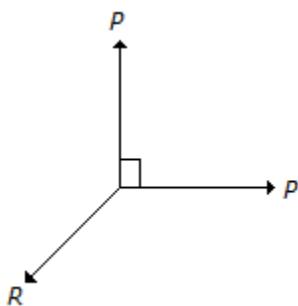
18. Which of the following is an equation of linear motion?(where,  $u$  and  $v$  = Initial and final velocity of the body,  $a$  = Acceleration of the body, and  $s$  = Displacement of the body in time  $t$  seconds.)

- A.  $v = u + a.t$   
B.  $s = u.t + 1/2 a.t^2$   
C.  $v^2 = u^2 + 2a.s$   
D. all of these

19. If a number of forces are acting at a point, their resultant will be inclined at an angle  $\theta$  with the horizontal, such that

- A.  $\tan \theta = \sum H / \sum V$   
B.  $\tan \theta = \sum V / \sum H$   
C.  $\tan \theta = \sum V \times \sum H$   
D.  $\tan \theta = \sqrt{\sum V + \sum H}$

20.



The above figure shows the two equal forces at right angles acting at a point. The value of force  $R$  acting along their bisector and in opposite direction is

- A.  $P/2$   
B.  $2P$

C.  $\sqrt{2} P$   
D.  $P / \sqrt{2}$

26. The mechanical advantage of a lifting machine is the ratio of  
A.distance moved by effort to the distance moved by load  
B.load lifted to the effort applied  
C.output to the input  
D.all of the above
27. Static friction is always \_\_\_\_\_ dynamic friction.  
A.equal to  
B.less than  
C.greater than
28. A body will begin to move down an inclined plane if the angle of inclination of the plane is \_\_\_\_\_ the angle of friction.  
A.equal to  
B.less than  
C.greater than
29. When a particle moves along a circular path with uniform velocity, there will be no tangential acceleration.  
A.Correct                                   B.Incorrect
30. The bodies which rebound after impact are called  
A.inelastic bodies  
B.elastic bodies  
C.neither elastic nor inelastic bodies  
D.none of these
31. The maximum frictional force, which comes into play, when a body just begins to slide over the surface of the other body, is known as  
A.static friction  
B.dynamic friction  
C.limiting friction  
D.coefficient of friction
32. The centre of gravity of an equilateral triangle with each side  $a$ , is \_\_\_\_\_ from any of the three sides.

- A.  $3a/2$
- B.  $23a$
- C.  $a/23$
- D.  $32a$

33. The distance, between the point of projection and the point where the projectile strikes the ground, is known as range.

- A. Correct
- B. Incorrect

34. The algebraic sum of the resolved parts of a number of forces in a given direction is equal to the resolved part of their resultant in the same direction. This is known as

- A. principle of independence of forces
- B. principle of resolution of forces
- C. principle of transmissibility of forces
- D. none of these

35. The triangle law of forces states that if two forces acting simultaneously on a particle, be represented in magnitude and direction by the two sides of a triangle taken in order, then their resultant may be represented in magnitude and direction by the third side of a triangle, taken in opposite order.

- A. True
- B. False

36. The angle between two forces when the resultant is maximum and minimum respectively are

- A.  $0^\circ$  and  $180^\circ$
- B.  $180^\circ$  and  $0^\circ$
- C.  $90^\circ$  and  $180^\circ$
- D.  $90^\circ$  and  $0^\circ$

37. The path of the projectile is a parabola.

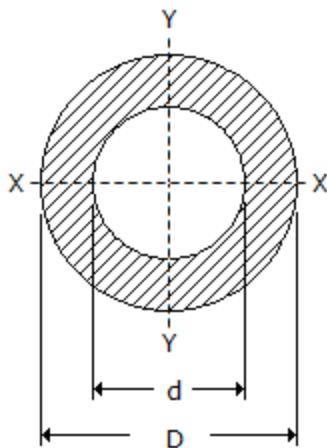
- A. True
- B. False

38. The equivalent length of a simple pendulum which gives the same frequency as compound pendulum is

- A.  $\frac{h}{k_G^2 + h^2}$
- B.  $\frac{k_G^2 + h^2}{h}$

- C.  $\frac{h^2}{k_G^2 + h^2}$   
D.  $\frac{k_G^2 + h^2}{h^2}$

39. A redundant frame is also called \_\_\_\_\_ frame.  
A. Perfect  
B. Imperfect  
C. Deficient
40. Mass moment of inertia of a uniform thin rod of mass  $M$  and length ( $l$ ) about its mid-point and perpendicular to its length is  
A.  $\frac{2}{3} Ml^2$   
B.  $\frac{1}{3} Ml^2$   
C.  $\frac{3}{4} Ml^2$   
D.  $\frac{1}{12} Ml^2$
41. A resultant force is a single force which produces the same effect as produced by all the given forces acting on a body.  
A. True                           B. False
42. When a rigid body is suspended vertically, and it oscillates with a small amplitude under the action of the force of gravity, the body is known as  
A. simple pendulum  
B. compound pendulum  
C. torsional pendulum  
D. second's pendulum
43. Moment of inertia of a hollow circular section, as shown in the below figure about X-axis, is



A.  $\frac{\pi}{16} (D^2 - d^2)$

B.  $\frac{\pi}{16} (D^3 - d^3)$

C.  $\frac{\pi}{32} (D^4 - d^4)$

D.  $\frac{\pi}{64} (D^4 - d^4)$

44. If two blocks of equal mass are attached to the two ends of a light string and one of the blocks is placed over a smooth horizontal plane while the other is hung freely after passing over a smooth pulley, then the two blocks will have some motion.

A. Agree

B. Disagree

45. During elastic impact, the relative velocity of the two bodies after impact is \_\_\_\_\_ the relative velocity of the two bodies before impact.

A. equal to

B. equal and opposite to

C. less than

D. greater than

46. Work done is said to be zero, when

A. some force acts on a body, but displacement is zero

B. no force acts on a body but some displacement takes place

C. either (a) or (b)

D. none of the above

47. The force which acts along the radius of a circle and directed away from the centre of the circle is called centrifugal force.

A.Agree

B.Disagree

48. One watt is equal to

A.0.1 joule/s

B.1 joule/s

C.10 joules/s

D.100 joules/s

49. two like parallel forces are acting at a distance of 24 mm apart and their resultant is 20 N. If the line of action of the resultant is 6 mm from any given force, the two forces are

A.15 N and 5 N

B.20 N and 5 N

C.15 N and 15 N

D.none of these

50. If two bodies having masses  $m_1$  and  $m_2$  ( $m_1 > m_2$ ) have equal kinetic energies, the momentum of body having mass  $m_1$  is \_\_\_\_\_ the momentum of body having mass  $m_2$ .

A.equal to

B.less than

C.greater than

# Mechanical Engineering Test 1: Answers

1, B 2, B 3,B 4, A 5, B 6, A 7, B 8,B 9,C 10,D

11,B 12,A 13,C 14,B 15,D 16,D 17,B 18,D 19,B

20,C 21,A 22,B 23,A 24,D 25,B 26,B 27,C 28,C

29,A 30,B 31,C 32,C 33,A 34,B 35,A 36,A 37,A

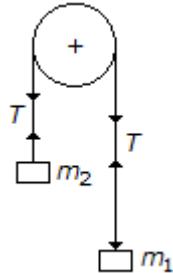
38,B 39,B 40,D 41,A 42,B 43,D 44,A 45,B 46,C

47,A 49,A 50,C

# Mechanical Engineering Test 2

**TIME: 50 MINUTES.**

1. If the masses of both the bodies, as shown in the below figure, are doubled, then the acceleration in the string will be



- A. Same                    B. Half  
C. Double

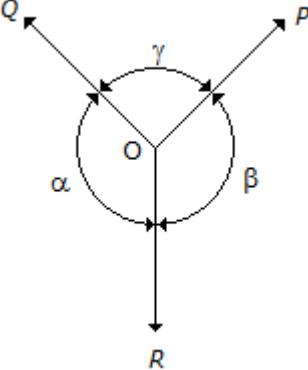
2. The loss of kinetic energy during inelastic impact, is given by (where  $m_1$  = Mass of the first body,  $m_2$  = Mass of the second body, and  $u_1$  and  $u_2$  = Velocities of the first and second bodies respectively.)

- A.  $\frac{m_1 m_2}{2(m_1 + m_2)} (u_1 - u_2)^2$   
B.  $\frac{2(m_1 + m_2)}{m_1 m_2} (u_1 - u_2)^2$   
C.  $\frac{m_1 m_2}{2(m_1 + m_2)} (u_1^2 - u_2^2)$   
D.  $\frac{2(m_1 + m_2)}{m_1 m_2} (u_1^2 - u_2^2)$

3. The centre of gravity of a hemisphere lies at a distance of  $3r / 8$  from its base measured along the vertical radius.

- sA. Correct                    B. Incorrect

4.



The above figure shows the three coplaner forces  $P$ ,  $Q$  and  $R$  acting at a point  $O$ . If these forces are in equilibrium, then

- A.  $\frac{P}{\sin\beta} = \frac{Q}{\sin\alpha} = \frac{R}{\sin\gamma}$
- B.  $\frac{P}{\sin\alpha} = \frac{Q}{\sin\beta} = \frac{R}{\sin\gamma}$
- C.  $\frac{P}{\sin\gamma} = \frac{Q}{\sin\alpha} = \frac{R}{\sin\beta}$
- D.  $\frac{P}{\sin\alpha} = \frac{Q}{\sin\gamma} = \frac{R}{\sin\beta}$

5. Moment of inertia of a rectangular section having width ( $b$ ) and depth ( $d$ ) about an axis passing through its C.G. and parallel to the depth ( $d$ ), is

- A.  $\frac{db^3}{12}$
- B.  $\frac{bd^3}{12}$
- C.  $\frac{db^3}{36}$
- D.  $\frac{bd^3}{36}$

6. The polygon law of forces states that if a number of forces, acting simultaneously on a particle, be represented in magnitude and direction by the sides a polygon taken in order, then their resultant is represented in magnitude and direction by the closing side of the polygon, taken in opposite direction.

A. Correct

B. Incorrect

7. A smooth cylinder lying on a \_\_\_\_\_ is in neutral equilibrium.

- A. curved surface
- B. convex surface
- C. horizontal surface

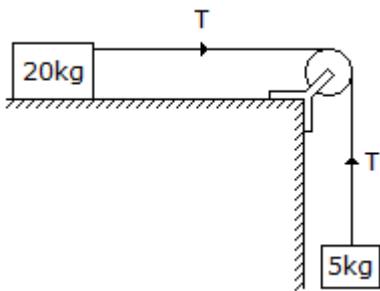
8. The velocity of a particle ( $v$ ) moving with simple harmonic motion, at any instant is given by (where  $r$  = Amplitude of motion, and  $y$  = Displacement of the particle from mean position.)

- A.  $\omega \sqrt{y^2 - r^2}$
- B.  $\omega \sqrt{r^2 - y^2}$
- C.  $\omega^2 \sqrt{y^2 - r^2}$
- D.  $\omega^2 \sqrt{r^2 - y^2}$

9. Varignon's theorem of moments states that if a number of coplaner forces acting on a particle are in equilibrium, then

- A. their algebraic sum is zero
- B. their lines of action are at equal distances
- C. the algebraic sum of their moments about any point in their plane is zero
- D. the algebraic sum of their moments about any point is equal to the moment of their resultant force about the same point.

10A block of mass 20 kg lying on a rough horizontal plane is connected by a light string passing over a smooth pulley to another mass 5 kg, which can move freely in the vertical direction, as shown in the below figure. The tension in the string will \_\_\_\_\_ with the increase in coefficient of friction.



- A. Increase
- B. Decrease
- C. not be effected

11. One end of a helical spring is fixed while the other end carries the load  $W$  which moves with simple harmonic motion. The frequency of motion is given

by(where  $\delta$  = Deflection of the spring.)

A.  $2\pi \sqrt{\frac{g}{\delta}}$

B.  $\frac{1}{2\pi} \sqrt{\frac{g}{\delta}}$

C.  $2\pi \sqrt{\frac{\delta}{g}}$

D.  $\frac{1}{2\pi} \sqrt{\frac{\delta}{g}}$

12. The angle of inclination with the vertical is \_\_\_\_\_ if the cyclist is running at a faster speed than that when he is running at a slower speed.

A.more                          B.Less

13. The range of projectile( $R$ ) on an upward inclined plane is

A.  $\frac{g \cos^2 \beta}{2u^2 \sin(\alpha + \beta) \cos \alpha}$

B.  $\frac{g \cos^2 \beta}{2u^2 \sin(\alpha + \beta) \cos \alpha}$

C.  $\frac{g \cos^2 \beta}{2u^2 \sin(\alpha - \beta) \cos \alpha}$

D.  $\frac{2u^2 \sin(\alpha - \beta) \cos \alpha}{g \cos^2 \beta}$

14. The centre of gravity of a right circular solid cone is at a distance of \_\_\_\_\_ from its base, measured along the vertical axis.(where  $h$  = Height of a right circular solid cone.)

A. $h/2$                           B. $h/3$   
C. $h/4$                             D. $h/6$

15. In actual machines, mechanical advantage is \_\_\_\_\_ velocity ratio.

A.equal to  
B.less than  
C.greater than

16. The radius of gyration is the distance where the whole mass (or area) of a body is assumed to be concentrated.

A.Correct                        B.Incorrect

17. If three coplaner forces acting on a point are in equilibrium, then each force is

proportional to the sine, of the angle between the other two.

A.Correct

B.Incorrect

18. A rubber ball is dropped from a height of 2 m. If there is no loss of velocity after rebounding, the ball will rise to a height of

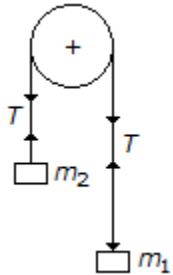
A.1m

B.2m

C.3m

D.4m

19. In the shown figure, the tension ( $T$ ) in the string will be



A.  $\frac{m_1 \cdot m_2 \cdot g}{m_1 + m_2}$

B.  $\frac{2m_1 \cdot m_2 \cdot g}{m_1 + m_2}$

C.  $\frac{m_1 + m_2}{m_1 \cdot m_2 \cdot g}$

D.  $\frac{m_1 + m_2}{m_1 \cdot m_2 \cdot g}$

20. When the spring of a watch is wound, it will possess

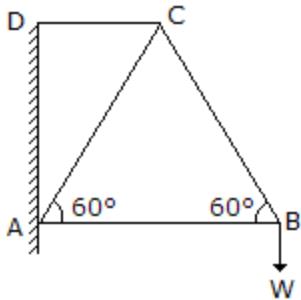
A.strain energy

B.kinetic energy

C.heat energy

D.electrical energy

21. In a framed structure, as shown in the below figure, the force in the member  $CD$  is tensile in nature.



[A.](#)Agree

[B.](#)Disagree

22. An irregular body may have more than one centre of gravity.

[A.](#)Yes

[B.](#)No

23. The rate of doing work is known as

- [A.](#)potential energy
- [B.](#)kinetic energy
- [C.](#)Power
- [D.](#)none of these

24. In a wormed geared pulley block, if the number of teeth on the worm wheel is doubled, then its velocity ratio is also doubled.

[A.](#)True

[B.](#)False

25. Moment of inertia of a circular section about its diameter ( $d$ ) is

- [A.](#) $\pi d^3/16$
- [B.](#) $\pi d^3/32$
- [C.](#) $\pi d^4/32$
- [D.](#) $\pi d^4/64$

26. The centre of oscillation and centre of suspension for a compound pendulum are interchangeable.

[A.](#)True

[B.](#)False

27. In a screw jack, the effort required to lower the load is \_\_\_\_\_ the effort required to raise the same load.

- [A.](#)less than
- [B.](#)equal to
- [C.](#)more than

28. The unit of work in S.I. units is

- A.newton  
C.kg-m

- B.Erg  
D.Joule

29. The static friction

- A.bears a constant ratio to the normal reaction between the two surfaces  
B.is independent of the area of contact, between the two surfaces  
C.always acts in a direction, opposite to that in which the body tends to move  
D.all of the above

30. The maximum height of a projectile on a horizontal plane, is

- A.  $\frac{u^2 \sin^2\alpha}{2g}$   
B.  $\frac{u^2 \cos^2\alpha}{2g}$   
C.  $\frac{u^2 \sin^2\alpha}{g}$   
D.  $\frac{u^2 \cos^2\alpha}{g}$

31. The acceleration of a particle moving with simple harmonic motion is \_\_\_\_\_ at the mean position.

- A.zero  
C.maximum

- B.Minimum

32. The velocity of a particle moving with simple harmonic motion is \_\_\_\_\_ at the mean position.

- A.zero  
C.maximum

- B.Minimum

33. A framed structure is imperfect, if the number of members are \_\_\_\_\_ (2j - 3).

- A.equal to  
B.less than  
C.greater than  
D.either (b) or (c)

34. The linear acceleration ( $a$ ) of a body rotating along a circular path of radius ( $r$ )

with an angular acceleration of  $\alpha$  rad /  $s^2$ , is

- A. $a = \alpha / r$
- B. $a = \alpha \cdot r$
- C. $a = r / \alpha$
- D.none of these

35. The total energy possessed by a system of moving bodies

- A.is constant at every instant
- B.varies from point to point
- C.is maximum in the start and minimum at the end
- D.is minimum in the start and maximum at the end

36. The moment of inertia of a solid cylinder of mass  $m$ , radius  $r$  and length  $l$  about the longitudinal axis or polar axis is

- |                    |                    |
|--------------------|--------------------|
| <u>A.</u> $mr^2/2$ | <u>B.</u> $mr^2/4$ |
| <u>C.</u> $mr^2/6$ | <u>D.</u> $mr^2/8$ |

37. In a screw jack, the effort required to lift the load is given by (where  $W$  = Load lifted,  $\alpha$  = Helix angle, and  $\phi$  = Angle of friction.)

- A. $P = W \tan (\alpha - \phi)$
- B. $P = W \tan (\alpha + \phi)$
- C. $P = W \tan (\phi - \alpha)$
- D. $P = W \cos (\alpha + \phi)$

38. The terms 'leverage' and 'mechanical advantage' Of a compound lever have got the same meaning.

- A.Correct
- B.Incorrect

39. A couple produces

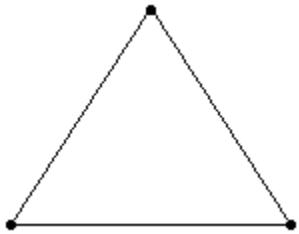
- A.translatory motion
- B.rotational motion
- C.combined translatory and rotational motion
- D.none of the above

40. Energy may be defined as the capacity of doing work.

- A.Correct
- B.Incorrect

41. For a self locking machine, the efficiency must be
- A. equal to 50%  
B. less than 50%  
C. greater than 50%  
D. 100%
42. The resultant of the two forces  $P$  and  $Q$  is  $R$ . If  $Q$  is doubled, the new resultant is perpendicular to  $P$ . Then
- A.  $P = Q$   
B.  $Q = R$   
C.  $Q = 2R$   
D. none of these
43. One joule is equal to
- A. 0.1 N-m  
B. 1 N-m  
C. 10 N-m  
D. 100 N-m
44. Whenever a force acts on a body and the body undergoes a displacement, then
- A. work is said to be done  
B. power is being transmitted  
C. body has kinetic energy of translation  
D. none of these
45. When a particle moves along a straight path, there will be centripetal acceleration as well as tangential acceleration.
- A. Correct    B. Incorrect
46. If the body falls freely under gravity, then the gravitational acceleration is taken as
- A. +8.9 m/s<sup>2</sup>  
B. -8.9 m/s<sup>2</sup>  
C. +9.8 m/s<sup>2</sup>  
D. -9.8 m/s<sup>2</sup>

47. A framed structure, as shown in the below figure, is a



- A.perfect frame
- B.deficient frame
- C.redundant frame
- D.none of the above

48. The rate of change of displacement of a body is called

- A.Velocity
- B.Acceleration
- C.Momentum
- D.none of these

49. The efficiency of a screw jack is maximum, when(where  $\alpha$  = Helix angle, and  $\phi$  = Angle of friction.)

- A. $\alpha = 45^\circ + \phi/2$
- B. $\alpha = 45^\circ - \phi/2$
- C. $\alpha = 90^\circ + \phi$
- D. $\alpha = 90^\circ - \phi$

50. The periodic time ( $T$ ) is given by(where  $\omega$  = Angular velocity of particle in rad / s.)

- A. $\omega/2\pi$
- B. $2\pi/\omega$
- C. $2\pi \times \omega$
- D. $\pi/\omega$

## **Mechanical Engineering Test 2: Answers**

**1,A 2,A 3,A 4,A 5,A 6,A 7,C 8,B 9,D 10,A**

**11,B 12,A 13,D 14,C 15,B 16,A 17,A 18,B**

**19B 20,A 21,A 22,B 23,C 24,A 25,D 26,A**

**27,A 28,D 29,D 30,A 31,C 32,C 33,D 34,B**

**35,A 36,A 37,B 38,A 39B 40,A 41,B 42,B**

**43,B 44,X 45,B 46,C 47,A 48,A 49,B 50,B**

# **Chemical Engineering :: Chemical Engineering Basics Test**

**TIME: 50 MINUTES**

1. Which one of the following is incombustible ?

- |  |                           |
|--|---------------------------|
| <u>A</u> H <sub>2</sub>                | <u>E</u> CCl <sub>4</sub> |
| <u>B</u> C <sub>2</sub> H <sub>2</sub> | <u>I</u> S                |
| <u>C</u>                               | <u>D</u>                  |

2. The softness or hardness of a grinding wheel depends upon the type & amount of bonding material used. For general purpose cutter grinding \_\_\_\_\_ grinding wheel is normally used.

- A.Hard
- B.Soft
- C.silicon carbide
- D.aluminium oxide

3. Tin based white metals are used, where bearings are subjected to

- A.high pressure & load.
- B.low pressure & load.
- C.high temperature.
- D.large surface wear.

4. Friction factor for fluid flow in pipe does not depend upon the

- A.pipe length.
- B.pipe roughness.
- C.fluid density & viscosity.
- D.mass flow rate of fluid.

5. All of the following alloying elements of steel increases hardness but sacrifice ductility, except

A.Nickel  
C.molybdenum

B.Vanadium  
D.Chromium

6. The following type of bonding is strongly directional in solids.

A.Vander Waal's  
B.Ionic  
C.Metallic  
D.Covalent

7. Fog is an example of colloidal system of

A.solid dispersed in gas.  
B.solid dispersed in liquid.  
C.liquid dispersed in gas.  
D.gas dispersed in liquid.

8. Chromium molybdenum steel can not be welded using \_\_\_\_\_ welding.

A.Thermit  
B.electrical resistance  
C.oxy-acetylene  
D.any of these

9. Speisses is a mixture of the following:

A.Arsenides of heavy metals.  
B.Antimonides of heavy metals.  
C.Arsenides & antimonides of heavy metals.  
D.Iron, cobalt and nickel.

10. Auto collimator is used to check

A.Flatness  
B.Angle  
C.rotor balancing  
D.Roughness

11. In troposphere (the weather domain), the temperature ' $t$ ' at height ' $h$ ' above the sea level in metres is given by (where, temperature at sea level is  $15^{\circ}\text{C}$  and  $t$  is in  $^{\circ}\text{C}$ .)

A. $t = 15 - 0.0065 h$   
B. $t = 15 + 0.0065 h$

C. $t = 0.0035 h - 15$

D. $t = 15 - 0.0035 h$

12. A high pressure boiler generates steam at a pressure greater than \_\_\_\_\_ kg/cm<sup>2</sup>.

- A.10                           B.30  
C.50                           D.80

13. Evaporative cooling process employs a combination of cooling and humidification in which the

- A.sensible heat is added.  
B.sensible heat is removed and the latent heat is added.  
C.latent heat is removed.  
D.sensible heat is added and latent heat is removed.

14. Which of the following is not an explosive ?

- A.TNT  
B.CMC  
C.RDX  
D.Lead azide

15. Maxwell's thermodynamic relations applies to the

- A.chemical systems in equilibrium.  
B.mechanical systems in equilibrium.  
C.irreversible thermodynamic processes.  
D.reversible thermodynamic processes.

16. Annealing of white cast iron produces \_\_\_\_\_ iron.  
A.Grey                                   B.Nodular  
C.malleable                              D.Spheroidal
17. Resistance of an electrical conductor is proportional to its (where,  $l$  = length and  $A$  = cross-sectional area of the conductor)  
A. $A$   
B. $L$   
C. $A^2$   
D.both 'a' & 'b'
18. A solar cell converts the sunlight directly into \_\_\_\_\_ energy.  
A.thermal                                 B.Electrical  
C.mechanical                              D.Chemical
19. If a nuclear reactor produces more fissile nuclear fuel than it consumes, then it is called a \_\_\_\_\_ reactor.  
A.critical                                  B.Breeder  
C.Fertile                                    D.Heterogenous
20. Wrought iron is never shaped by  
A.Casting  
B.cold working  
C.Forging  
D.Welding
21. Powder metallurgy process does not make metal powder by  
A.Atomization  
B.grinding/milling  
C.Hammering  
D.electrolytic deposition
22. In the blast furnace, incorporation of water vapour in the blast gives the following effect.  
A.Increases the reducing potential of the gas.  
B.Increases the flame temperature.

- C.No significant change occurs.
- D.Increases the hydrogen content in the metal.

23. Pick out the wrong statement.

- A. A ferromagnetic material becomes paramagnetic above the 'Curie temperature'.
- B. Permanent magnets are made of hard materials, whereas electromagnets require soft magnetic materials.
- C. Soft magnetic materials (e.g., pure iron) have higher permeability and low hysteresis loss and coercive forces.
- D. Tungsten steel and alnico are not hard magnetic materials.

24. The usual energy consumption in electric arc furnace steel making is \_\_\_\_\_ KWh/ton of steel.

- A.60 – 100
- B.400 – 700
- C.1200 -1500
- D.2000 – 2300

n

25. Maximum permissible air velocity in pipelines is about \_\_\_\_\_ metre/second.

- A.5
- B.10
- C.20
- D.40

26. Area under the stress-strain curve upto the \_\_\_\_\_ is referred to as the modulus of resilience.

- A.yield strength
- B.elastic limit
- C.proportional limit
- D.maximum point

27. \_\_\_\_\_ is the hardest oxide and is hence used where high wear resistance at high temperature is required.

- A.Beryllia
- B.Zirconia
- C.Alumina
- D.Magnesia

28. Titanium alloys are welded using the Following process:

- A.TIG welding.
  - B.Submerged arc welding.
  - C.Butt welding.
  - D.Electron beam welding.
29. An alloy of Fe - 0.4 % C is
- A.cast iron.
  - B.hypo-eutectoid steel.
  - C.hyper-eutectoid steel.
  - D.eutectoid steel
30. A material in which the atoms are arranged regularly in some directions but not in others, is termed as 'mesomorphous material'; an example of which is
- A.Lead
  - B.Glass
  - C.Mica
  - D.Silver
31. In extrusion of metals, which of the following statement is true ?
- A.speed of the extruded material is same as that of ram speed.
  - B.Redundant work is a function of the die angle.
  - C.Relative motion between the billet surface and the container wall is always present.
  - D.Hollow ram is used for indirect extrusion.
32. Nuclear fission of one atom of uranium-235 produces the energy equivalent to about \_\_\_\_\_ MeV.
- A.20
  - B.200
  - C.500
  - D.1000
33. Which of the following parameters is not responsible for the heat loss from a hot steam carrying bare pipe surface located in a room without fans ?
- A.Emissivity of pipe surface.
  - B.Diameter & length of the pipe.
  - C.Temperature of hot pipe surface & that of air in the room.
  - D.none of these.
34. Machinability of hard alloys and tool steels is improved by
- A.spherodising
  - B.Annealing
  - C.tempering
  - D.Normalizing

35. Transformation range for ferrous material is the temperature interval during which \_\_\_\_\_ is formed during its heating.

- |                      |                     |
|----------------------|---------------------|
| <u>A</u> .cementite  | <u>B</u> .Austenite |
| <u>C</u> .martensite | <u>D</u> .Pearlite  |

36. Maximum amount of thermal radiation is emitted at all wavelengths at any specified temperature by a/an \_\_\_\_\_ body.

- |                  |                 |
|------------------|-----------------|
| <u>A</u> .Grey   | <u>B</u> .Black |
| <u>C</u> .opaque | <u>D</u> .White |

37. In condensers used in thermal power plants, steam is normally used in shell side and cooling water on the tube side, because of the reason that

- A. compared to the mass flow rate of cooling water, the rate of condensation of steam is invariably smaller.  
B. maintaining vacuum on tube side is more difficult than that on the shell side.  
C. water velocity can be increased conveniently to increase the overall heat transfer co-efficient because of its lower specific volume compared to steam.  
D. condenser can act as a storage unit for condensed steam.

38. Cobalt - 60 is used as a source of \_\_\_\_\_ in medical therapy & industrial radiography.

- |                           |                           |
|---------------------------|---------------------------|
| <u>A</u> .X-rays          | <u>B</u> . $\gamma$ -rays |
| <u>C</u> . $\alpha$ -rays | <u>D</u> . $\beta$ -rays  |

39. Absolute zero pressure can be attained at a temperature of

- |                         |
|-------------------------|
| <u>A</u> .0°C           |
| <u>B</u> .50°K          |
| <u>C</u> .0°R           |
| <u>D</u> .none of these |

40. The product out from a cupola is called

- |                         |
|-------------------------|
| <u>A</u> .wrought iron  |
| <u>B</u> .pig iron      |
| <u>C</u> .cast iron     |
| <u>D</u> .none of these |

41. Nusselt number is related to Grashoff number ( $Gr$ ) in turbulent & laminar flow

respectively, in respect of free convection over a vertical flat plate as

- A.  $Gr^{0.25}$ ,  $Gr$
- B.  $Gr^{0.25}$ ,  $Gr^{0.33}$
- C.  $Gr$ ,  $Gr^{0.25}$
- D.  $Gr^{0.33}$ ,  $Gr^{0.25}$

42. If the demand for an item is trebled and the order cost is reduced to one third, then the economic order quantity

- A. is trebled.
- B. remains unchanged.
- C. decreases by a factor of 3.
- D. decreases by a factor of 1/3.

43. Copper deposits are found in India at the following location:

- |                     |                      |
|---------------------|----------------------|
| <u>A.</u> Kudremukh | <u>B.</u> Kolar      |
| <u>C.</u> Khetri    | <u>D.</u> Ramagundam |

44. Electrical conductivities of semi-conductors are of the order of \_\_\_\_\_ ohm/cm.

- A.  $10^{-3}$
- B.  $10^3$
- C.  $10^{-15}$
- D.  $10^{15}$

45. Corrosion of metals can not be prevented by its

- |                       |                      |
|-----------------------|----------------------|
| <u>A.</u> tempering   | <u>B.</u> Chromising |
| <u>C.</u> aluminising | <u>D.</u> Alloying   |

.

46. Transition from laminar to turbulent zone in free convection heat transfer is governed by the critical value of

- A. Grashoff number.
- B. Grashoff number & Reynolds number.
- C. Reynolds number.
- D. Grashoff number & Prandtl number.

47. The most economical channel section for the fluid flow is the one for which the discharge is maximum for a given cross-sectional area. Vertical velocity distribution in an open channel for laminar flow can be assumed to be

- A.Parabolic
- B.Hyperbolic
- C.straight line
- D.none of these

48. Energy of the sun arises mainly from \_\_\_\_\_ reactions.

- A.Fusion
- B.Fission
- C.Combustion
- D.none of these

49. Which of the following fastening devices has a head at one end and a nut fitted to the other ?

- A.Bolt
- B.Stud
- C.Top bolt
- D.None of these

50. Sudden fall of atmospheric pressure by a large amount is an indication of the

- A.Rain
- B.cold wave
- C.Storm
- D.fair weather

# **Chemical Engineering Basics Test Answer**

1,B 2,D 3,A 4,A 5,A 6,D 7,C 8,Nill 9,a 10,b

11,a 12,d 13,b 14,b 15,a 16,c 17,d 18,b

19,b 20,a 21,c 22,a 23,d 24,b 25,b 26,c 27,c

28,a 29,b 30,a 31,d 32,b 33,d 34,b 35,b 36,a

37,c 38,b 39,c 40,c 41,a 42,b 43,c 44,a 45,a

46,d 47,a 48,a 49,b 50,c

# Computer Engineering:: Networking Basics Test

1. How long is an IPv6 address?  
A.32 bits  
B.128 bytes  
C.64 bits  
D.128 bits
  
2. What flavor of Network Address Translation can be used to have one IP address allow many users to connect to the global Internet?  
A.NAT                                   B.Static  
C.Dynamic                               D.PAT
  
3. What are the two main types of access control lists (ACLs)?
  1. Standard
  2. IEEE
  3. Extended
  4. Specialized  
A.1 and 3  
B.2 and 4  
C.3 and 4  
D.1 and 2
  
4. What command is used to create a backup configuration?  
A.*copy running backup*  
B.*copy running-config startup-config*  
C.*config mem*  
D.*wr mem*
  
  
  
  
  
5. You have 10 users plugged into a hub running 10Mbps half-duplex. There is a server connected to the switch running 10Mbps half-duplex as well. How much bandwidth does each host have to the server?  
A.100 kbps  
B.1 Mbps

- C. 2 Mbps  
D. 10 Mbps

6. Which WLAN IEEE specification allows up to 54Mbps at 2.4GHz?
- A.A                           B.B  
C.G                           D.N
7. Which of the following is the valid host range for the subnet on which the IP address 192.168.168.188 255.255.255.192 resides?
- A.192.168.168.129-190                   B.192.168.168.129-191  
C.192.168.168.128-190                   D.192.168.168.128-192
- .
8. To back up an IOS, what command will you use?
- A.*backup IOS disk*  
B.*copy ios tftp*  
C.*copy tftp flash*  
D.*copy flash tftp*
9. What protocol does PPP use to identify the Network layer protocol?
- A.NCP                                   B.ISDN  
C.HDLC                                   D.LCP
10. Which of the following commands will allow you to set your Telnet password on a Cisco router?
- A.*line telnet 0 4*  
B.*line aux 0 4*  
C.*line vty 0 4*  
D.*line con 0*

11. Which protocol does DHCP use at the Transport layer?

- |   |  |
|---|--|
| <a href="#">A. IP</a><br><a href="#">C. UDP</a> | <a href="#">B. TCP</a><br><a href="#">D. ARP</a> |
|---|--|

12. Which command is used to determine if an IP access list is enabled on a particular interface?

- [A. show access-lists](#)
- [B. show interface](#)
- [C. show ip interface](#)
- [D. show interface access-lists](#)

13. Where is a hub specified in the OSI model?

- [A. Session layer](#)
- [B. Physical layer](#)
- [C. Data Link layer](#)
- [D. Application layer](#)

14. What does the *passive* command provide to dynamic routing protocols?

- [A. Stops an interface from sending or receiving periodic dynamic updates.](#)
- [B. Stops an interface from sending periodic dynamic updates but not from receiving updates.](#)
- [C. Stops the router from receiving any dynamic updates.](#)
- [D. Stops the router from sending any dynamic updates.](#)

15. Which protocol is used to send a destination network unknown message back to originating hosts?

- |   |  |
|---|--|
| <a href="#">A. TCP</a><br><a href="#">C. ICMP</a> | <a href="#">B. ARP</a><br><a href="#">D. BootP</a> |
|---|--|

16. How often are BPDUs sent from a layer 2 device?

- [A. Never](#)
- [B. Every 2 seconds](#)

- C. Every 10 minutes
- D. Every 30 seconds

17. How many broadcast domains are created when you segment a network with a 12-port switch?

- A. 1
- B. 2
- C. 5
- D. 12

18. What does the command *routerA(config)#line cons 0* allow you to perform next?

- A. Set the Telnet password.
- B. Shut down the router.
- C. Set your console password.
- D. Disable console connections.

19. Which router command allows you to view the entire contents of all access lists?

- A. *show all access-lists*
- B. *show access-lists*
- C. *show ip interface*
- D. *show interface*

20. Which class of IP address has the most host addresses available by default?

- A. A
- B. B
- C. C
- D. A and B

21. In a network with dozens of switches, how many root bridges would you have?

- A. 1
- B. 2
- C. 5
- D. 12

22. What PPP protocol provides dynamic addressing, authentication, and multilink?

- [A.NCP](#)
- [B.HDLC](#)
- [C.LCP](#)
- [D.X.25](#)

23. What is a stub network?

- [A.A network with more than one exit point.](#)
- [B.A network with more than one exit and entry point.](#)
- [C.A network with only one entry and no exit point.](#)
- [D.A network that has only one entry and exit point.](#)

24. If your router is facilitating a CSU/DSU, which of the following commands do you need to use to provide the router with a 64000bps serial link?

- [A.RouterA\(config\)#bandwidth 64](#)
- [B.RouterA\(config-if\)#bandwidth 64000](#)
- [C.RouterA\(config-if\)#clock rate 64](#)
- [D.RouterA\(config-if\)#clock rate 64000](#)

.

25. Which one of the following is true regarding VLANs?

- [A.Two VLANs are configured by default on all Cisco switches.](#)
- [B.VLANs only work if you have a complete Cisco switched internetwork. No off-brand switches are allowed.](#)
- [C.You should not have more than 10 switches in the same VTP domain.](#)
- [D.VTP is used to send VLAN information to switches in a configured VTP domain.](#)

26. What does a VLAN do?

- [A.Acts as the fastest port to all servers.](#)
- [B.Provides multiple collision domains on one switch port.](#)
- [C.Breaks up broadcast domains in a layer 2 switch internetwork.](#)
- [D.Provides multiple broadcast domains within a single collision domain.](#)

27. What is the main reason the OSI model was created?
- A.To create a layered model larger than the DoD model.  
B.So application developers can change only one layer's protocols at a time.  
C.So different networks could communicate.  
D.So Cisco could use the model.
28. How many collision domains are created when you segment a network with a 12-port switch?
- A.1                          B.2  
C.5                          D.12
29. What command will display the line, protocol, DLCI, and LMI information of an interface?
- A.*sh pvc*  
B.*show interface*  
C.*show frame-relay pvc*  
D.*show run*
30. Which protocol does Ping use?
- A.TCP                          B.ARP  
C.ICMP                          D.BootP
31. Which command is used to upgrade an IOS on a Cisco router?
- A.*copy tftp run*  
B.*copy tftp start*  
C.*config net*  
D.*copy tftp flash*
32. If you wanted to delete the configuration stored in NVRAM, what would you type?

- A.*erase startup*
- B.*erase nvram*
- C.*delete nvram*
- D.*erase running*

33. What protocols are used to configure trunking on a switch?

- 1. VLAN Trunking Protocol
- 2. VLAN
- 3. 802.1Q
- 4. ISL

- A.1 and 2
- B.3 and 4
- C.1 only
- D.2 only

# Answer And Explanation:

1, Answer: Option D

2, Answer: Option D

Explanation:

Port Address Translation (PAT) allows a one-to-many approach to network address translation.

3, Answer: Option A

Explanation:

Standard and extended access control lists (ACLs) are used to configure security on a router.

4, Answer: Option B

Explanation:

Each device has 10 Mbps to the server.

5, Answer: Option D

Explanation:

Each device has 10 Mbps to the server.

6, Answer: Option C

Explanation:

IEEE 802.11B is 2.4GHz, but with a maximum of only 11Mbps. IEEE 802.11G is in the 2.4GHz range, with a top speed of 54Mbps.

7, Answer: Option A

Explanation:

$256 - 192 = 64$ .  $64 + 64 = 128$ .  $128 + 64 = 192$ . The subnet is 128, the broadcast address is 191, and the valid host range is the numbers in between, or 129-190

8, Answer: Option D

Explanation:

The command `copy flash tftp` will prompt you to back up an existing IOS in flash to a TFTP host.

9, Answer: Option A

Explanation:

Network Control Protocol is used to help identify the Network layer protocol used in the packet.

10, Answer: Option C

Explanation:

The command `line vty 0 4` places you in a prompt that will allow you to set or change your Telnet password.

11, Answer: Option C

Explanation:

User Datagram Protocol is a connection network service at the Transport layer, and DHCP uses this connectionless service.

12, Answer: Option C

Explanation:

The `show ip interface` command will show you if any outbound or inbound interfaces have an access list set.

13, Answer: Option B

Explanation:

Hubs regenerate electrical signals, which are specified at the Physical layer.

14, Answer: Option B

Explanation:

The passive command, short for passive-interface, stops regular updates from being sent out an interface. However, the interface can still receive updates.

15, Answer: Option C

Explanation:

ICMP is the protocol at the Network layer that is used to send messages back to an originating router.

16, Answer: Option B

Explanation:

Every 2 seconds, BPDUs are sent out from all active bridge ports by default.

17, Answer: Option A

Explanation:

By default, switches break up collision domains but are one large broadcast domain.

18, Answer: Option C

Explanation:

The command line console 0 places you at a prompt where you can then set your console user-mode password.

19, Answer: Option B

Explanation:

To see the contents of all access lists, use the show access-lists command.

20, Answer: Option A

Explanation:

Class A addressing provides 24 bits for host addressing.

21, Answer: Option A

Explanation:

You should have only one root bridge per network.

22, Answer: Option C

Explanation:

Link Control Protocol in the PPP stack provides dynamic addressing, authentication, and multilink.

23, Answer: Option D

Explanation:

Stub networks have only one connection to an internetwork. Only default routes can be set on a stub network or network loops may occur.

24, Answer: Option D

Explanation:

The clock rate command is two words, and the speed of the line is in bps

25, Answer: Option D

Explanation:

Switches do not propagate VLAN information by default; you must configure the VTP domain. VLAN Trunking Protocol (VTP) is used to propagate VLAN information across a trunk link

26, Answer: Option C

Explanation:

VLANs break up broadcast domains at layer 2.

27, swer: Option C

Explanation:

VLANs break up broadcast domains at layer 2.

28, Answer: Option D

Explanation:

Layer 2 switching creates individual collision domains.

29, Answer: Option B

Explanation:

The show interface command shows the line, protocol, DLCI, and LMI information of an interface.

30, Answer: Option C

Explanation:

ICMP is the protocol at the Network layer that is used to send echo requests and replies.

31, Answer: Option D

Explanation:

The copy tftp flash command places a new file in flash memory, which is the default location for the Cisco IOS in Cisco routers.

32, Answer: Option A

Explanation:

The command erase startup-config deletes the configuration stored in NVRAM.

33, Answer: Option B

Explanation:

VTP is not right because it has nothing to do with trunking except that it sends VLAN information across a trunk link. 802.1Q and ISL are used to configure trunking on a port.

# Computer Fundamentals Test

1. Which of the following languages is more suited to a structured program?  
A.PL/1  
B.FORTRAN  
C.BASIC  
D.PASCAL  
E.None of the above
  
2. A computer assisted method for the recording and analyzing of existing or hypothetical systems is  
A.Data transmission  
B.Data flow  
C.Data capture  
D.Data processing  
E.None of the above
  
3. The brain of any computer system is  
A.ALU  
B.Memory  
C.CPU  
D.Control unit  
E.None of the above
  
4. What difference does the 5th generation computer have from other generation computers?  
A.Technological advancement  
B.Scientific code  
C.Object Oriented Programming  
D.All of the above  
E.None of the above
  
5. Which of the following computer language is used for artificial intelligence?  
A.FORTRAN  
B.PROLOG  
C.C

D.COBOL

E.None of the above

6. The tracks on a disk which can be accessed without repositioning the R/W heads is

A.Surface

B.Cylinder

C.Cluster

D.All of the above

E.None of the above

7. Which of the following is the 1's complement of 10?

M

A.01

B.110

C.11

D.10

E.None of the above

8. A section of code to which control is transferred when a processor is interrupted is known as

B.SVC

C.IP

D.MDR

E.None of the above

9. Which part interprets program instructions and initiate control operations.

A.Input

B.Storage unit

C.Logic unit

D.Control unit

E.None of the above

10. The binary system uses powers of

A.2

B.10

C.8

D.16

E.None of the above

11. A computer program that converts assembly language to machine language is
- A.Compiler
  - B.Interpreter
  - C.Assembler
  - D.Comparator
  - E.None of the above
12. The time required for the fetching and execution of one simple machine instruction is
- A.Delay time
  - B.CPU cycle
  - C.Real time
  - D.Seek time
  - E.None of the above
13. The time for which a piece of equipment operates is called
- A.Seek time
  - B.Effective time
  - C.Access time
  - D.Real time
  - E.None of the above
14. Binary numbers need more places for counting because
- A.They are always big numbers
  - B.Any no. of 0's can be added in front of them
  - C.Binary base is small
  - D.0's and 1's have to be properly spaced apart
  - E.None of the above
15. Which access method is used for obtaining a record from a cassette tape?
- A.Direct
  - B.Sequential
  - C.Random
  - D.All of the above
  - E.None of the above

16. Any type of storage that is used for holding information between steps in its processing is
- [A.CPU](#)
  - [B.Primary storage](#)
  - [C.Intermediate storage](#)
  - [D.Internal storage](#)
  - [E.None of the above](#)
17. A name applied by Intel corp. to high speed MOS technology is called
- [A.HDLC](#)
  - [B.LAP](#)
  - [C.HMOS](#)
  - [D.SDLC](#)
  - [E.None of the above](#)
18. A program component that allows structuring of a program in an unusual way is known as
- [A.Correlation](#)
  - [B.Coroutine](#)
  - [C.Diagonalization](#)
  - [D.Quene](#)
  - [E.None of the above](#)
19. The radian of a number system
- [A.Is variable](#)
  - [B.Has nothing to do with digit position value](#)
  - [C.Equals the number of its distinct counting digits](#)
  - [D.Is always an even number](#)
  - [E.None of the above](#)
20. The section of the CPU that selects, interprets and sees to the execution of program instructions
- [A.Memory](#)
  - [B.Register unit](#)
  - [C.Control unit](#)
  - [D.ALU](#)
  - [E.None of the above](#)

21. Which type of system puts the user into direct conversation with the computer through a keyboard?
- A.Real time processing  
B.Interactive computer  
C.Batch processing  
D.Time sharing  
E.None of the above
22. The term referring to evacuating the content of some part of the machine is known as
- A.Dump  
B.Enhancement  
C.Down  
D.Compiler  
E.None of the above
23. A single packet on a data link is known as
- A.Path  
B.Frame  
C.Block  
D.Group  
E.None of the above
24. The process of communicating with a file from a terminal is
- A.Interactive  
B.Interrogation  
C.Heuristic  
D.All of the above  
E.None of the above
25. A common boundary between two systems is called
- A.Interdiction  
B.Interface  
C.Surface  
D.None of the above

26. The examination and changing of single bits or small groups of bits within a word is called

- A. Bit
- B. Byte
- C. Bit manipulation
- D. Bit slice
- E. None of the above

27. Which computer has been designed to be as compact as possible?

- A. Mini
- B. Super computer
- C. Micro computer
- D. Mainframe
- E. None of the above

28. Which method is used to connect a remote computer?

- A. Device
- B. Dialup
- C. Diagnostic
- D. Logic circuit
- E. None of the above

29. How many bit code is used by Murray code for TELEPRINTER machines.

- A. 4
- B. 5
- C. 9
- D. 25
- E. None of the above

30. The symbols used in an assembly language are

- A. Codes
- B. Mnemonics
- C. Assembler
- D. All of the above
- E. None of the above

31. The 2's complement of a binary no. is obtained by adding....to its 1's

complement.

- A.0
- B.1
- C.10
- D.12
- E.None of the above

32. A systems programming language for microcomputers in the Intel family is

- A.PL/C
- B.PL/CT
- C.PL/M
- D.PLA
- E.None of the above

33. A datum that indicates some important state in the content of input or output is

- A.Sequence
- B.Sentinel
- C.SIO
- D.Sibling
- E.None of the above

34. Which is a non-standard version of a computing language?

- A.PROLOG
- B.APL
- C.Army
- D.PL/1
- E.None of the above

35. Which of the following is still useful for adding numbers?

- A.EDSAC
- B.ENIAC
- C.Abacus
- D.UNIVAC
- E.None of the above

36. The average time necessary for the correct sector of a disk to arrive at the read write head is \_\_\_\_\_

- A.Down time

- B. Seek time
- C. Rotational delay
- D. Access time
- E. None of the above

37. A number that is used to control the form of another number is known as

- A. Map
- B. Mask
- C. Mamtossa
- D. Marker
- E. None of the above

38. A general purpose single-user microcomputer designed to be operated by one person at a time is

- A. Special-purpose computer
- B. KIPS
- C. M
- D. PC
- E. None of the above

39. ASCII stands for

- A. American standard code for information interchange
- B. All purpose scientific code for information interchange
- C. American security code for information interchange
- D. American Scientific code for information interchange
- E. None of the above

40. Which device of computer operation dispenses with the use of the keyboard?

- A. Joystick
- B. Light pen
- C. Mouse
- D. Touch
- E. None of the above

41. The microcomputer, Intel MCS-80 is based on the widely used Intel  
A.8080 microprocessor  
B.8085 microprocessor  
C.8086 microprocessor  
D.8082 microprocessor  
E.None of the above
42. Which is a machine-oriented high-level language for the GEC 4080 series machines.  
A.LOGO  
B.SNOBOL  
C.Babbage  
D.ALGOL  
E.None of the above
43. A program that is employed in the development, repair or enhancement of other programs is known as  
A.System software  
B.Software tool  
C.Applications program  
D.Utility program  
E.None of the above
44. Any storage device added to a computer beyond the immediately usable main storage is known as  
A.Floppy disk  
B.Hard disk  
C.Backing store  
D.Punched card  
E.None of the above
45. Which output device is used for translating information from a computer into pictorial form on paper.  
A.Mouse  
B.Plotter  
C.Touch panel  
D.Card punch  
E.None of the above

# Answers

1,D 2,B 3,C 4,A 5,B 6,B 7A 8,A 9,D 10,A  
11,C 12,B 13,B 14,C 15,B 16,C 17,C 18,B  
19,C 20,C 21,B 22,A 23,B 24,B 25,B 26,C  
27,C 28,B 29,B 30,B 31,B 32,C 33,B 34,C  
35,C 36,C 37,B 38,D 39,A 40,C 41,A 42,C  
43,B 44,C 45,B

# Database Test

Time:10 Minutes

1. The DBMS acts as an interface between what two components of an enterprise-class database system?  
A.Database application and the database  
B.Data and the database  
C.The user and the database application  
D.Database application and SQL
  
2. Which of the following products was an early implementation of the relational model developed by E.F. Codd of IBM?  
A.IDMS                                   B.DB2  
C.dBase-II                                D.R:base
  
3. The following are components of a database except \_\_\_\_\_.  
A.user data  
B.Metadata  
C.Reports  
D.Indexes
  
4. An application where only one user accesses the database at a given time is an example of a(n) \_\_\_\_\_.  
A.single-user database application  
B.multiuser database application  
C.e-commerce database application  
D.data mining database application
  
5. An on-line commercial site such as Amazon.com is an example of a(n)  
\_\_\_\_\_.  
A.single-user database application  
B.multiuser database application  
C.e-commerce database application

D.data mining database application

6. Which of the following products was the first to implement true relational algebra in a PC DBMS?

A.IDMS  
C.dBase-II

B.Oracle  
D.R:base

7. SQL stands for \_\_\_\_\_ .

A.Structured Query Language  
B.Sequential Query Language  
C.Structured Question Language  
D.Sequential Question Language

8. Because it contains a description of its own structure, a database is considered to be \_\_\_\_\_ .

A.Described  
B.metadata compatible  
C.self-describing  
D.an application program

9. The following are functions of a DBMS except \_\_\_\_\_ .

A.creating and processing forms  
B.creating databases  
C.processing data  
D.administrating databases

10. Helping people keep track of things is the purpose of a(n) \_\_\_\_\_ .

A.Database  
C.Instance  
B.Table  
D.Relationship

11. Which of the following products implemented the CODASYL DBTG model?

A.IDMS  
C.dBase-II  
B.DB2  
D.R:base

12. An Enterprise Resource Planning application is an example of a(n) \_\_\_\_\_ .

A.single-user database application

- B.multiuser database application
- C.e-commerce database application
- D.data mining database application

13. A DBMS that combines a DBMS and an application generator is \_\_\_\_\_ .

- A.Microsoft's SQL Server
- B.Microsoft's Access
- C.IBM's DB2
- D.Oracle Corporation's Oracle

14. You have run an SQL statement that asked the DBMS to display data in a table named USER\_TABLES. The results include columns of data labeled "TableName," "NumberOfColumns" and "PrimaryKey." You are looking at \_\_\_\_\_ .

- A.user data.
- B.Metadata
- C.A report
- D.Indexes

15. Which of the following is not considered to be a basic element of an enterprise-class database system?

- A.Users
- B.Database applications
- C.DBMS
- D.COBOL programs

## ANSWERS

1,A 2,B 3,C 4,A 5,C 6,D 7,A 8,C 9,A 10,A 11,A 12,B 13,B 14,B 15,D

# Electrical Engineering :: Quantities and Units Test

1. When these numbers are multiplied,  $(6 \times 10^3) (5 \times 10^5)$ , the result is

  - A.  $3 \times 10^8$
  - B.  $30 \times 10^8$
  - C.  $300 \times 10^9$
  - D.  $3,000 \times 10^7$
2. Resistance is measured in

<u>A.</u> Henries	<u>B.</u> ohms
<u>C.</u> Hertz	<u>D.</u> watts
3. The number 65,000 expressed in scientific notation as a number between 1 and 10 times a power of ten is

  - A.  $0.65 \times 10^4$
  - B.  $6.5 \times 10^4$
  - C.  $65 \times 10^4$
  - D.  $650 \times 10^3$
4. When converting 7,000 nA to microamperes, the result is

  - A.  $0.007 \mu\text{A}$
  - B.  $0.7 \mu\text{A}$
  - C.  $700 \mu\text{A}$
  - D.  $7 \mu\text{A}$
5. The number of kilowatts in 135 milliwatts is

  - A.  $1.35 \times 10^{-4} \text{ Kw}$
  - B.  $135 \times 10^{-3} \text{ kW}$
  - C.  $0.0135 \text{ kW}$
  - D.  $0.00135 \text{ kW}$
6. The number  $4.4 \times 10^6$  ohms expressed using a metric prefix is

  - A. 4 k
  - B. 4.4 k
  - C. 4 M
  - D. 4.4 M

7. The number of microamperes in 2 milliamperes is

- A. 2  $\mu$ A
- B. 20  $\mu$ A
- C. 200  $\mu$ A
- D. 2,000  $\mu$ A

8. The number of millivolts in 0.06 kilovolts is

- A. 600 V
- B. 6,000 mV
- C. 60,000 mV
- D. 600,000 mV

9. Eighteen thousand watts is the same as

- A. 18 mW
- B. 18 MW
- C. 18 kW
- D. 18  $\mu$ W

10. The number  $3.2 \times 10^{-5}$  A expressed using a metric prefix is

- A. 32  $\mu$ A
- B. 3.3  $\mu$ A
- C. 320 mA
- D. 3,200 mA

11. When converting 0.16 mA to microamperes, the result is

- A. 16  $\mu$ A
- B. 160  $\mu$ A
- C. 1,600  $\mu$ A
- D. 0.0016  $\mu$ A

12. When these numbers are added,  $(87 \times 10^5) + (2.5 \times 10^6)$ , the result is

- A.  $1.12 \times 10^4$
- B.  $11.2 \times 10^5$
- C.  $112 \times 10^5$
- D.  $1,120 \times 10^6$

13. The quantity  $3.3 \times 10^3$  is the same as

- A. 330
- B. 3,300

C.33,000

D.0.0033

14. Which of the following is not an electrical quantity?

A.Voltage

B.Current

C.Distance

D.Power

15. Seven thousand volts can be expressed as

A.7 kV

B.7 MV

C.7 mV

D.either 7 kV or 7 mV

16. The number 4,500,000 can be expressed as

A. $4,500 \times 10^6$

B. $4.5 \times 10^6$

C. $4.5 \times 10^{-3}$

D.either  $4,500 \times 10^3$  or  $4.5 \times 10^6$

17. When converting 1,600 kilohms to megohms, the result is

A.1,600,000 M  $\Omega$

B.160 M  $\Omega$

C.1.6 M  $\Omega$

D.0.160 M  $\Omega$

18. What is  $(79 \times 10^6)/(12 \times 10^{-8})$ ?

A. $6,580 \times 10^{12}$

B. $658 \times 10^{10}$

C. $6.58 \times 10^{14}$

D. $0.658 \times 10^{16}$

19. Fourteen milliamperes can be expressed as

A.14 MA

B.14  $\mu$ A

C.14 kA

D.14 mA

20. The number  $4.38 \times 10^{-3}$  expressed as a number having a power of  $10^{-6}$  is  
A. $4,380 \times 10^{-6}$   
B. $438 \times 10^{-6}$   
C. $43,800 \times 10^{-6}$   
D. $438,000 \times 10^{-6}$
21. Voltage is measured in  
A.Volts                                   B.farads  
C.Watts                                   D.ohms
22. The number 0.0003 multiplied by  $10^{-3}$  is  
A.0.0000003                           B.0.0003  
C.3                                        D.3,000
23. The number of megohms in 0.03 kilohms is  
A.0.00002 M  $\Omega$   
B.0.0002 M  $\Omega$   
C. $3 \times 10^{-5}$  M  $\Omega$   
D.either 0.00002 M  $\Omega$  or 0.0002 M  $\Omega$
24. The quantity  $43 \times 10^{-3}$  is the same as  
A.0.043                                   B.0.430  
C.430                                      D.43,000
25. Current is measured in  
A.Watts                                   B.Volts  
C.Henries                                D.amperes

## ANSWERS

1,B 2,B 3,B 4,D 5,A 6,D 7,D 8,C 9,C 10,A 11,B 12,C 13,B 14,C  
15,A 16,B 17,C 18,C 19,D 20,A 21,A 22,A 23,C 24,A 25,D

# Energy and Power Test

1. A 33  $\Omega$  half-watt resistor and a 330  $\Omega$  half-watt resistor are connected across a 12 V source. Which one(s) will overheat?  
A.33  $\Omega$   
B.330  $\Omega$   
C.both resistors  
D.neither resistor
  
2. When the pointer of an analog ohmmeter reads close to zero, the resistor being measured is  
A.Overheated                                   B.shorted  
C.Open   D.reversed
  
3. In 0.025 W, there are  
A.25 Kw  
B.0.00025 mW  
C.2,500  $\mu$ W  
D.25 mW
  
4. A certain appliance uses 350 W. If it is allowed to run continuously for 24 days, how many kilowatt-hours of energy does it consume?  
A.20.16 kWh  
B.201.6 kWh  
C.2.01 kWh  
D.8.4 kWh
  
5. A power supply produces a 0.6 W output with an input of 0.7 W. Its percentage of efficiency is  
A.8.57%   B.42.85%  
C.4.28%   D.85.7%
  
6. A given power supply is capable of providing 6 A for 3.5 h. Its ampere-hour rating is  
A.0.58 Ah  
B.2.1 Ah  
C.21 Ah

D.58 Ah

7. A 15 V source is connected across a 12  $\Omega$  resistor. How much energy is used in three minutes?
- A.938 Wh  
B.0.938 Wh  
C.56.25 Wh  
D.5.6 Wh
8. At the end of a 14 day period, your utility bill shows that you have used 18 kWh. What is your average daily power?
- A.1.286 kWh  
B.12.85 kWh  
C.535 kWh  
D.252 kWh
9. A 120  $\Omega$  resistor must carry a maximum current of 25 mA. Its rating should be at least
- A.4.8 W  
B.150 mW  
C.15 mW  
D.480 mW
10. If you used 400 W of power for 30 h, you have used
- A.1.3 kWh  
B.13.3 kWh  
C.1.2 kWh  
D.12 kWh
11. A 6 V battery is connected to a 300  $\Omega$  load. Under these conditions, it is rated at 40 Ah. How long can it supply current to the load?
- A.1 h  
B.200 h  
C.2,000 h  
D.10 h
12. In 40 kW, there are
- A.0.4 mW

- B. 40,000 W
- C. 400 W
- D. 5,000 W

13. If you used 600 W of power for 60 h, you have used

- A. 36 kWh
- B. 3.6 kWh
- C. 10 kWh
- D. 1 kWh

14. If it takes 400 ms to use 12,000 J of energy, the power is

- A. 30 kW
- B. 30 W
- C. 3 W
- D. 300 kW

15. How many watt-hours represent 65 W used for 18 h?

- A. 11.7 Wh
- B. 1,170 Wh
- C. 11,700 Wh
- D. 117,000 Wh

16. For 12 V and 40 mA, the power is

- A. 480 mW
- B. 0.480 W
- C. 480,000  $\mu$ W
- D. all of the above

17. A 220  $\Omega$  resistor dissipates 3 W. The voltage is

- A. 73.3 V
- B. 2.5 V
- C. 25.7 V
- D. 257 V

18. A  $3.3\text{ k}\Omega$  resistor dissipates 0.25 W. The current is

- A. 8.7 mA
- B. 87 mA
- C. 8.7  $\mu\text{A}$
- D. 8.7 A

19. A half-watt is equal to how many milliwatts?

- A. 5,000 mW
- B. 5 mW
- C. 500 mW
- D. 50 mW

20. Three hundred joules of energy are consumed in 15 s. The power is

- A. 2,000 W
- B. 2 W
- C. 20 W
- D. 200 W

21. The power rating of a carbon-composition resistor that is to handle up to 1.2 W should be

- A. 2 W
- B. 1 W
- C. 5 W
- D. 0.5 W

22. How much continuous current can be drawn from a 60 Ah battery for 14 h?

- A. 42.8 A
- B. 428 A
- C. 4.28 A
- D. 4.2 A

23. A 75  $\Omega$  load uses 2 W of power. The output voltage of the power supply is approximately

- A. 120 V
- B. 1.2 V
- C. 12 V
- D. 6 V

24. When the current through a  $12\text{ k}\Omega$  resistor is 8 mA, the power is  
A.7.68 mW  
B.768 mW  
C.7.68 W  
D.76.8 W
25. A  $68\text{ }\Omega$  resistor is connected across the terminals of a 3 V battery. The power dissipation of the resistor is  
A.132 mW  
B.13.2 mW  
C.22.6 mW  
D.226 mW

## ANSWERS

1,D 2,B 3,D 4,B 5,D 6,C 7,B 8,A 9,B 10,D 11,C 12,B 13,A 14,A  
15,B 16,D 17,C 18,A 19,C 20,C 21,A 22,C 23,C 24,B 25,B

# Voltage, Current and Resistance Test

Time: 55 Minutes

1. Materials with lots of free electrons are called  
A.Conductors                           B.Insulators  
C.Semiconductors                       D.Filters
  
2. The unit of electrical charge is the  
A.Coulomb                              B.Joule  
C.Volt                                    D.Watt
  
3. Current flows in a circuit when  
A.a switch is opened  
B.a switch is closed  
C.the switch is either open or closed  
D.there is no voltage
  
4. The minimum resistance value for a blue, gray, red, silver resistor is  
A.612  $\Omega$   
B.6,120  $\Omega$   
C.6,800  $\Omega$   
D.6,460  $\Omega$
  
5. The maximum resistance value for a brown, red, yellow, gold resistor is  
A.126,000  $\Omega$   
B.126,600  $\Omega$   
C.114,000  $\Omega$   
D.132,000  $\Omega$
  
6. Which of the following is not a type of energy source?  
A.Generator  
B.Rheostat  
C.solar cell  
D.Battery
  
7. When placed close together, two positively charged materials will  
A.Attract  
B.become neutral

C.become negative  
D.Repel

8. The conductance of an 8 ohm resistance is

A.12.5 mS  
B.8 mS  
C.12 S  
D.125 mS

9. Electrons in the outer orbit are called

A.Nuclei                           B.Valences  
C.Waves                           D.Shells

10. A thermistor is a type of

A.Switch  
B.Resistor  
C.Battery  
D.power supply

11. A two-terminal variable resistor is known as a

A.potentiometer                   B.Thermistor  
C.Rheostat                       D.Wiper

12. Eight-tenths coulomb passes a point in 4 s. The current in amperes is

A.1.6 A  
B.16 A  
C.2 A  
D.0.2 A

13. When the current is 2.5 A, how many coulombs pass a point in 0.2 s?

A.12.5 C  
B.1.25 C  
C.0.5 C  
D.5 C

14. The colored bands for a 4,700 ohm resistor with a ten percent tolerance are
- A.yellow, violet, red, gold  
B.yellow, violet, orange, gold  
C.yellow, violet, red, silver  
D.orange, violet, red, silver
15. A material that does not allow current under normal conditions is a(n)
- A.Insulator                                   B.Conductor  
C.semiconductor                              D.Valence
16. The unit of electrical charge is the
- A.Volt   B.Ampere  
C.Joule    D.Coulomb
17. A multimeter measures
- A.Current  
B.Voltage  
C.Resistance  
D.current, voltage, and resistance
18. If there is 6 A of current through the filament of a lamp, how many coulombs of charge move through the filament in 1.75 s?
- A.10.5 C  
B.105 C  
C.3.4 C  
D.34 C
19. A wiper is the sliding contact in a
- A.Switch  
B.photoconductive cell  
C.Thermistor  
D.Potentiometer
20. A neutral atom with an atomic number of five has how many electrons?
- A.1  
B.5  
C.None  
D.depends on the type of atom

21. A circuit breaker is a  
A.Fuse  
B.Switch  
C.resettable protective device  
D.Resistor
22. An ammeter is an electrical instrument used to measure  
A.Current  
B.Voltage  
C.Resistance  
D.none of the above
23. A red, red, orange, gold resistor has a nominal value of  
A.22,000  $\Omega$   
B.2,200  $\Omega$   
C.22  $\Omega$   
D.2.2  $\Omega$
24. An ohmmeter is an instrument for measuring  
A.Current                                   B.Voltage  
C.Resistance                               D.Wattage
25. The current in a given circuit is not to exceed 24 A. Which value of fuse is best?  
A.a fuse is not necessary  
B.10 A  
C.24 A  
D.20 A

## Answers

1,A 2,A 3,B 4,B 5,A 6,B 7,D 8,D 9,B 10,B  
11,C 12,D 13,C 14,C 15,A 16,D 17,D 18,A  
19,D 20,B 21,C 22,A 23,A 24,C 25,C

# Civil Engineering Test :: Building Construction

Time: 55 Minutes

1. In case of Raymond pile
  - A.lengths vary from 6 m to 12 m
  - B.diameter of top of piles varies from 40 cm to 60 cm
  - C.diameter of pile at bottom varies from 20 cm to 28 cm
  - D.thickness of outer shell depends upon pile diameter
  - E.all the above.
2. Queen closer may be placed
  - A.in header course
  - B.in stretcher course
  - C.in header course next to first brick
  - D.in stretcher course next to first brick
  - E.in any position.
3. Dado is usually provided in
  - A.dinning halls
  - B.bath rooms
  - C.living rooms
  - D.Verandah
  - E.roofs.
4. The foundation in which a cantilever beam is provided to join two footings, is known as
  - A.strip footing
  - B.strap footing
  - C.combined footing
  - D.raft footing
  - E.none of these.
5. The foundations are placed below ground level, to increase
  - A.Strength
  - B.Workability

- C. stability of structure
- D. all the above.

6, Stud(s) of a common wooden partition

- A. are vertical wooden members
- B. is the upper horizontal wooden member
- C. is the lower horizontal wooden member
- D. are the intermediate horizontal wooden members.

7. Pick up the correct statement from the following :

- A. inclined borings are made for taking samples under existing structures
- B. inclined borings are occasionally used instead of vertical holes.
- C. the spacing of inclined borings is kept such that one bore hole is vertically above the bottom of an adjacent bore hole.
- D. all the above.

8. Pick up the commonly adopted geophysical method in civil engineering from the following :

- A. the seismic method
- B. electrical resistivity method
- C. gravitational method
- D. magnetic method
- E. both (a) and (b) of the above.

9. To ensure that supporting area of an offset footing of a boundary wall is fully compressive, the C.G. of load must act

- A. at the centre of the base
- B. within the middle third of the base
- C. within the middle fifth of the base
- D. neither (a), (b) nor (c).

10. The 9 cm x 9 cm side of a brick as seen in the wall face, is generally known as

- |                     |                  |
|---------------------|------------------|
| <u>A.</u> Stretcher | <u>B.</u> Face   |
| <u>C.</u> Front     | <u>D.</u> Header |
| <u>E.</u> side.     |                  |

11. The taper of precast concrete pile should not be more than  
A.1 cm per metre length  
B.2 cm per metre length  
C.4 cm per metre length  
D.5 cm per metre length.
12. The under surface of an arch, is called  
A.Soffit   B.Intrados  
C.Haunch   D.back.
13. The raft slab is projected beyond the outer walls of the structure by  
A.5 to 10 cm  
B.15 to 20 cm  
C.25 to 30 cm  
D.30 to 45 cm  
E.60 cm.
14. The process of making the back ground rough, before plastering, is  
A.Dubbing   B.Hacking  
C.Blistering   D.peeling.
15. Black cotton soil is unsuitable for foundations because its  
A.bearing capacity is low  
B.permeability is uncertain  
C.particles are cohesive  
D.property to undergo a volumetric change due to variation of moisture content.
16. The loose pockets in soil mass can be bridged safely by providing a raft foundation provided the soft area is smaller than  
A.the column spacing  
B.one-third the column spacing  
C.half the column spacing  
D.three-fourth the column spacing  
E.none of these.

17. The portion of a brick cut across the width, is called

- A.Closer
- B.half brick
- C.Bed
- D.bat.

18. The concrete slump recommended for beams and slabs ; is

- A.25 to 50 mm
- B.25 to 75 mm
- C.30 to 125 mm
- D.50 to 100 mm
- E.none of these.

19. The member which is placed horizontally to support common rafter of a sloping roof, is

- |                  |                  |
|------------------|------------------|
| <u>A.</u> Purlin | <u>B.</u> Cleat  |
| <u>C.</u> Batten | <u>D.</u> strut. |

20. Pick up the correct statement from the following:

- A.Louvered door is generally provided in bath rooms
- B.Flush door is generally provided in dinning room
- C.Revolving door is generally provided in cinema halls
- D.Sliding door is generally provided in show rooms
- E.All the above.

21. Grillage foundation

- A. is used to transfer heavy structural loads from steel columns to a soil having low bearing capacity
- B.is light and economical
- C. does not require deep cutting as the required base area with required pressure intensity is obtained at a shallow depth
- D.is constructed by rolled steel joists (R.S.J.) placed in single or double tier
- E.all the above.

22. The exterior angle between outer faces of a wall, is known as

- A.Turn
- B.Junction
- C.Quoin
- D.all the above.

23. In jack arch floor, the rise is kept
- A.1/6th of the span
  - B.1/8th of the span
  - C.1/10th of the span
  - D.1/12th of the span
  - E.1/15th of the span.
24. While designing a stair, the product of rise and going is approximately kept equal to
- A.350
  - B.420
  - C.450
  - D.500
  - E.600.
25. For constructing a terrazo floor. Pick up the incorrect statement from the following :
- A.a base course is prepared as in cement concrete flooring
  - B.a 32 mm thick layer of cement concrete (1 : 2 : 4) is laid on the base
  - C.course and the surface is made smooth by trowelling
  - D.glass strips are driven into the layer according to the pattern required
  - E.after final grinding is over, oxalic acid mixed with water is spread over
  - F.and rubbed hard with soft material
  - G.none of these.
26. The entrained concrete is used in lining walls and roofs for making
- A.heat insulated
  - B.sound insulated
  - C.neither (a) nor (b)
  - D.both (a) and (b).
27. The pile which is provided with a bulb filled with concrete at its lower end, is known as
- A.Simplex pile
  - B.Mac-Arthur pile
  - C.Raymond pile
  - D.Franki pile
  - E.none of these.

28. In case of multi-storeyed buildings, the forms to be removed first are

- A.sides of beams and girders
- B.column forms
- C.bottom of beams and girders
- D.all the above at the same time.

29. For providing a raft foundation, the following activities are involved

1. ramming the foundation bed
2. excavation of the soil upto required depth
3. laying the reinforcement over the foundation bed
4. curing the cement concrete placed over reinforcement
5. pouring the cement concrete over the reinforcement.

The correct sequence is

- A.1, 2, 3, 4, 5
- B.5, 4, 3, 2, 1
- C.2, 1, 3, 5, 4
- D.3, 2, 5, 1, 4.

30. The maximum permissible deflection of a timber beam supporting a roof, is

- A. $L/100$
- B. $L/150$
- C. $L/260$
- D. $L/360$
- E.none of these.

31. The angular steps used for changing direction of the stairs, are called

- A.round steps
- B.angular steps
- C.Winders
- D.radial steps
- E.circular steps.

32. During percussion drilling

- A. ground water observations are hindered due to entry of the slurry in the soil below the bottom of the hole
- B.caving or mixing of strata are caused in soft soils or cohesionless soils

C. the soil to a considerable depth below the bottom of the hole gets disturbed  
D.all the above.

33. In English garden wall bond

- A.one course of headers to three or five course of stretchers
- B.queen closer in provided in each heading course
- C. the middle course of stretchers is started with a header to give proper vertical joints
- D.all the above.

34. A projecting piece usually provided to support a truss, is

- A.Cornice
- B.Coping
- C.Frieze
- D.lintal.

35. The line of intersection of the surfaces of a sloping roof forming an external angle exceeding  $180^\circ$ , is

- A.Ridge
- B.Hip
- C.Valley
- D.none of these.

36. A solid core of rock is formed in side the cylinder in the case of

- A.auger boring
- B.percussion drilling
- C.diamond drilling
- D.wash boring.

37. The single stage well point system of dewatering an excavation can be used if the depth of excavation does not exceed

- A.5 m
- B.10 m
- C.15 m
- D.20 m
- E.25 m.

38. The piece of a brick cut with its one corner equivalent to half the length and half the width of a full brick, is known as  
A.queen closer  
B.bevelled closer  
C.king closer  
D.half king closer.
39. The brick laid with its breadth parallel to the face of a wall, is known as  
A.Header  
B.Stretcher  
C.Closer  
D.none of these.
40. A wooden block hinged on post outside a door, is known  
A.Cleat  
B.Stop  
C.Horn  
D.none of these.
41. Pick up the incorrect statement from the following :  
A.The function of foundation is to distribute the load of super structure over a large bearing area  
B.No timbering is required for shallow trenches  
C.Shallow foundations can be constructed on made-up soil  
D.Grillage foundation is classified as a shallow foundation  
E.Black cotton soil is very good for foundation bed.
42. In horizontal D.P.C, thickness of cement concrete (1 : 2 : 4) is  
A.2 cm  
B.4 cm  
C.6 cm  
D.8 cm  
E.10 cm.
43. Which one of the following factors is considered for the orientation of buildings :  
A.the direction of the prevailing winds in the area  
B.the exposure of the walls and roof of the buildings to the rays of sun

- C.the extent up to which the sunrays penetrate with the verandah.  
D.all the above.

44. Pick up the incorrect statement from the following :

- A.Cement is added to lime mortar to increase its hydraulic properties only  
B.Lime surkhi mortar is used for pointing the walls  
C.Lime should be slaked before preparing lime mortar  
D.High early strength concrete is generally used in cold weather.

45. Which one of the following rocks is used for monumental buildings :

- A.Granite  
B.Marble  
C.sand stone  
D.slate.

46. The Auger borings are not common

- A.in soils that require lateral support  
B.in cohesive soils  
C.in soft soils  
D.none of the above.

S

47. The form work from the underside of slabs, can be removed only after

- A.1 day  
B.4 days  
C.7 days  
D.14 days.

48. Arches in the form of masonry arcs struck from more than four centres, are called

- A.two curved arches  
B.gothic arches  
C.ogee arches  
D.drop gothic arches.

49. If ( $\phi$ ) is the angle of repose of soil of weight  $w \text{ kg/m}^3$ , the horizontal pressure  $p$  at a depth of  $h$  metres per metre length of wall, is

A.  $wh \times \frac{1 - \sin \phi}{1 + \sin \phi}$

B.  $\frac{wh}{2} \times \frac{1 - \sin \phi}{1 + \sin \phi}$

C.  $wh \times \sqrt{\frac{1 - \sin \phi}{1 + \sin \phi}}$

D.  $wh \times \sqrt{\frac{1 + \sin \phi}{1 - \sin \phi}}$

50. According to Rankine's formula, minimum depth of foundations, is

A.  $\frac{P}{w} \times \left( \frac{1 + \sin \phi}{1 - \sin \phi} \right)^2$

B.  $\frac{P}{w} \times \left( \frac{1 - \sin \phi}{1 + \sin \phi} \right)^2$

C.  $\frac{P}{2w} \times \left( \frac{1 - \sin \phi}{1 + \sin \phi} \right)^2$

D.  $\frac{P}{w} \times \left( \frac{1 + \sin \phi}{1 - \sin \phi} \right)$

### Answers:

1,E 2,C 3,B 4,B 5,C 6,A 7,D 8,E 9,B 10,D

11,B 12,A 13,D 14,B 15,D 16,B 17,D 18,C

19,A 20,C 21,E 22,C 23,D 24,B 25,B 26,D

27,B 28,B 29,C 30,D 31,C 32,D 33,D 34,C

35,B 36,C 37,A 38,C 39,A 40,A 41,E 42,B

43,D 44,A 45,B 46,A 47,C 48,C 49,A 50,B

$S$