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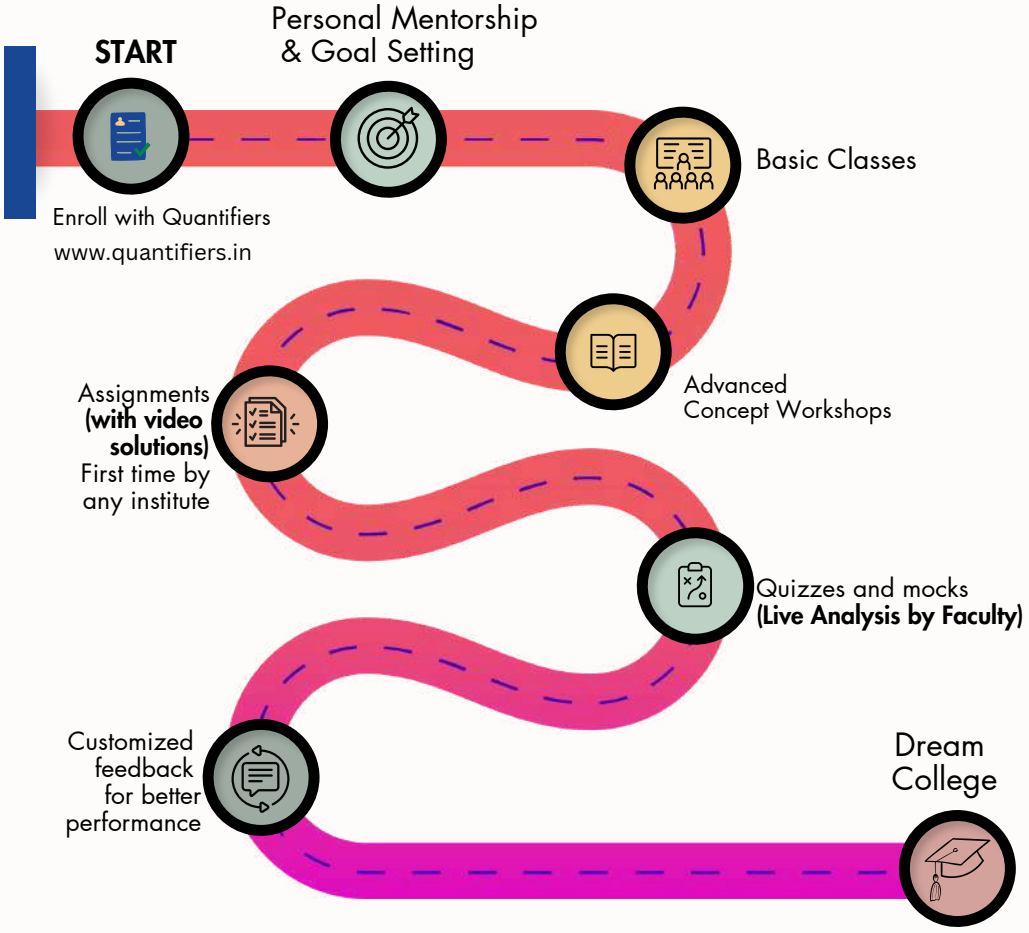

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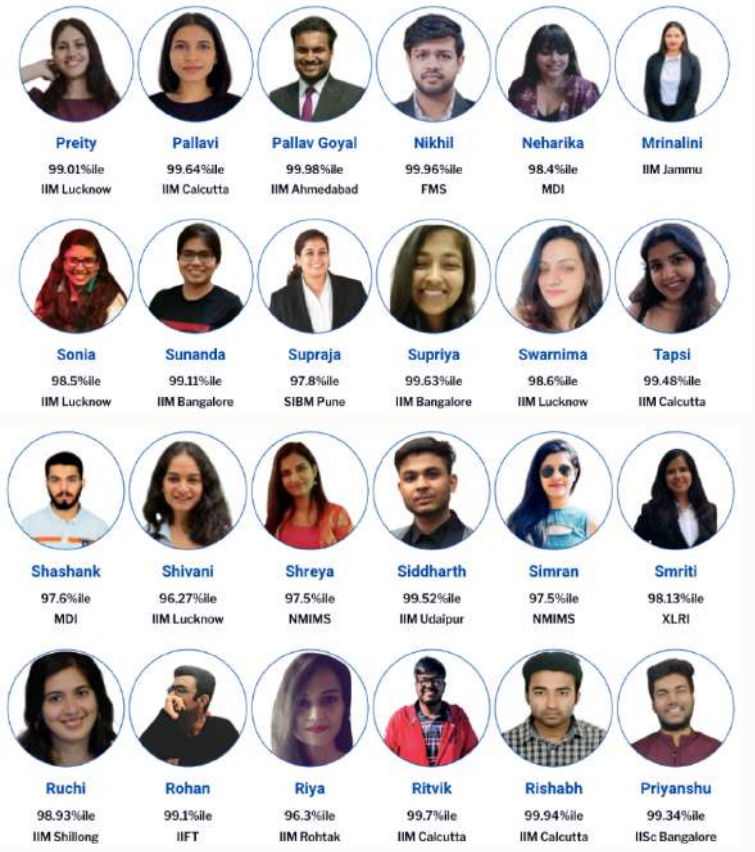


CAT 2016 Verbal Ability (Memory Based Paper)

1. Arrange the sentences A, B, C and D to form a logical sequence between sentences 1 and 6.

1. Amount of published information available varies widely by industry.
A. Unfortunately for the researcher, many industries do not meet these criteria, and there may be little published information available.
B. Generally, the problem the researcher will face in using published data for analyzing an economically meaningful industry is that they are too broad or too arranged to fit the industry.
C. However, it is always possible to gain some important information about an industry from published sources and these sources should be aggressively pursued.
D. Larger the industry, the older it is, and the slower the rate of technological change, better is the available published information.
6. If a researcher starts a searching for data with this reality in mind, the uselessness of broad data will be better recognized and the tendency to give up will be avoided.

2. Arrange the sentences A, B, C and D to form a logical sequence between sentences 1 and 6.

1. The main source of power in industrial undertaking is electricity.
A. Electricity from water also requires enormous river valley projects involving huge expenditure.
B. In contrast, electricity from atomic power stations will result in a tremendous saving in expenditure.
C. Besides, the mineral resources of the world required for generation of electricity are being rapidly depleted.
D. But the production of electricity needs huge quantities of coal.
6. The installation of atomic plants will help in meeting the shortage of these resources.

3. Arrange the sentences A, B, C and D to form a logical sequence between sentences 1 and 6.

1. Intensity of competition in an industry is neither a matter of coincidence nor bad luck.
A. The collective strength of these forces determines the ultimate profit potential in the industry where profit potential is measured in terms of long run returns on invested capital.
B. Rather, competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors.
C. Not all industries have the same potential.
D. The state of competition in an industry depends on five basic competitive forces.
6. They differ fundamentally in their ultimate profit potential as the collective strength of the forces differ.

4. Arrange the sentences A, B, C and D to form a logical sequence between sentences 1 and 6.

1. The New Economic Policy comprises the various policy measures and changes introduced since July 1991.
A. There is a common thread running through all these measures.
B. The objective is simple to improve the efficiency of the system.
C. The regulator mechanism involving multitude of controls has fragmented the capacity and reduced competition even in the private sector.
D. The thrust of the new policy is towards creating a more competitive environment as a means to improving the productivity and efficiency of the economy.
6. This is to be achieved by removing the banners and restrictions on the entry and growth of firms.

(a) DCAB
(b) ABCD
(c) BDAC
(d) CDBA

5. A number of sentences are given below which, when properly sequenced, form a coherent paragraph, Each sentence is labelled with a letter. However, One of the statement is illogically placed. Choose the illogically placed out of sentences from among the five given choices so that remaining four can construct a coherent paragraph.

A. It is turning off the tap.
B. And with no consensus of the exit policy, the government is damned if it supports loss making units and damned if it doesn't.
C. The private sector did the same in the past because securing legal sanction for closure was virtually impossible.
D. After years of funding the losses of public sector companies, the government is doing the unthinkable.
E. Private sector and public sector companies act in a similar fashion when in crisis.

6. A number of sentences are given below which, when properly sequenced, form a coherent paragraph, Each sentence is labelled with a letter. However, One of the statement is illogically placed. Choose the illogically placed out of sentences from among the five given choices so that remaining four can construct a coherent paragraph.

A. Trade protocols were signed, the dollar as the medium of exchange was ignored, trade was denominated in rupees and the exchange rate between the two countries was to be fixed outside the ambit of free markets.
B. A young India, some years after independence fashioning her foreign policy of nonalignment, found it prudent to stay close to the former Soviet Union.
C. Therefore it lead to the escalation of cold war between Soviet Union and the U.S.A.
D. Once upon a time there was a super power named Soviet Union that attracted nations apprehensive of the global aspirations of the other superpower, the U.S.A.
E. One way of doing this was to evolve a bilateral relations in trade that could be called upon provide a buffer against the arm-twisting by the U.S.A.

7. A number of sentences are given below which, when properly sequenced, form a coherent paragraph, Each sentence is labelled with a letter. However, One of the statement is illogically placed. Choose the illogically placed out of sentences from among the five given choices so that remaining four can construct a coherent paragraph.

A. I had heard that sort of thing before.
B. He said that his generation was the first to believe that it had no future.
C. A young American made earthling stopped by my house the other day to talk about some book of mine he had read.
D. He was the son of a Boston man who had died an alcoholic vagrant.
E. Alcohol had a devastating effect on this Boston based American family

Evidence has been presented that the unconscious mind, still viewed by many psychological scientists as the shadow of a ‘‘real’’ conscious mind, is identifiably more deliberate, action oriented and complex than its conscious counterpart. Furthermore, researchers have proven that the mind is incredibly efficient at extracting meaning from stimuli of which one is not consciously aware. The claims above are made on conclusive experimentations in which test subjects who were allowed to sleep during a decision making process made more optimal decisions when compared to the subjects who were given the exact same amount of information but were not allowed to sleep, leading researchers to believe that rationality comes on the way of making a rational decision. Researchers explain that while the conscious mind can only follow strict rules, unconscious mind can handle and integrate a larger amount of information, explaining why it can make better decisions. Even more surprising than this unconscious mind’s ability is that the mental processes that drive such decision making are necessarily minimal and unsophisticated and do not require humongous amount of calories to make us arrive at the best decision whereas using conscious mind for complex decisions burns up a lot of energy, setting in fatigue, forcing the conscious mind to give up and leading to subconscious decisions. Overall, researchers agree that there is no need to have sleepless night pondering over a complex issue to resolve it when it can actually be solved more efficiently by snoring the night away.

8. The purpose of the passage is to:

A. highlight the differences among psychologists regarding the importance of the unconscious mind in making complex decisions.
B. contrast and compare the workings of the rationality with that of deliberate, action-oriented and complex decision making processes.
C. prove by citing results of experiments that one decision-making process is better than the other.
D. show that unconscious mind is not that undependable as previously thought.
E. ascertain that using conscious and unconscious minds together yield second-to-none judgments.

9. French cuisine is highly regarded all over the world. Yet in Paris there are more American restaurants selling burgers and fries (which many people now class as junk food) than there are in any other European capital city. Obviously the French are very fond of junk food, and are not too proud to eat it.

Which of the following, if true, would most weaken the author's contention?
A. There are also a larger number of Lebanese restaurants in Paris than there are in other European capital cities
B. French Cordon Bleu cuisine is very expensive
C. The number of French tourists eating in New York burger restaurants is very low
D. Junk food is actually has high nutritional value when eaten in moderation
E. There are an unusually large number of American tourists in Paris who eat at burger joints

In research designed to investigate the possibility of animals developing friendship with other, unrelated, members of their species, a group of 29 chimpanzees were reared together for 15 years. At the end of that time the chimps were presented with two options for obtaining food: press a lever and feed themselves, or press another identical lever and feed themselves, and at the same time deliver food to the chimp next door. (The chimps were able to see each other). The researchers found that the chimps were no more likely to choose the lever that fed a neighbour. The researchers concluded that the chimps had no concept of friendship. However, one critic has suggested that the animals were in an artificial environment from which little can be concluded, and that, at the least, the test ought to have involved the animals being able to touch.

10. What role do the parts in boldface play in the argument above?

A. The first is a position that the critic opposes. The second is a position that the critic supports.
B. The first is an observation that supports the researcher's position. The second is an observation that opposes the researcher's position.
C. The first is a finding on which the researchers base their conclusion. The second is a suggestion that might cast doubt on that finding.
D. The first is an observation that supports the critic's conclusion. The second is the critic's conclusion.
E. The first is part of the evidence that the critic disputes. The second is a suggestion that the researchers do not accept.

A conservation problem equally as important as that of soil erosion is the loss of soil fertility. Most agriculture was originally supported by the natural fertility of the soil; and, in areas in which soils were deep and rich in minerals, farming could be carried on for many years without the return of any nutrients to the soil other than those supplied through the natural breakdown of plant and animal wastes. In river basins, such as that of the Nile, annual flooding deposited a rich layer of silt over the soil, thus restoring its fertility. In areas of active volcanism, such as Hawaii, soil fertility has been renewed by the periodic deposition of volcanic ash. In other areas, however, natural fertility has been quickly exhausted. This is true of most forest soils, particularly those in the humid tropics. Because continued cropping in such areas caused a rapid decline in fertility and therefore in crop yields, fertility could be restored only by abandoning the areas and allowing the natural forest vegetation to return. Over a period if time, the soil surface would be rejuvenated by parent materials, new circulation channels would form deep in the soil, and the deposition of forest debris would restore minerals to the topsoil. Primitive agriculture in such forests was of shifting nature: areas were cleared of trees and the woody material burned to add ash to the soil; after a few years of farming, the plots would be

abandoned and new sites cleared. As long as populations were sparse in relation to the area of forestland, such agricultural methods did little harm. They could not, however, support dense populations or produce large quantities of surplus foods.
Starting with the most easily depleted soils, which were also the easiest to farm, the practice of using various fertilizers was developed. The earliest fertilizers were organic manures, but later, larger yields were obtained by adding balanced combinations of those nutrients (e.g. potassium, nitrogen, phosphorus and calcium) that crop plants require in greatest quantity. Because high yields are essential, most modern agriculture depends upon the continued addition of chemical fertilizers to the soil. Usually these substances are added in mineral form, but nitrogen is often added as urea, an organic compound.
Early in agricultural history, it was found that the practice of growing the same crop year after year in a particular plot of ground not only caused undesirable changes in the physical structure of the soil, but also drained the soil of its nutrients. The practice of crop rotation was discovered to be a useful way to maintain the condition of the soil, and also to prevent the buildup of those insects and other plant pests that are attracted to a particular kind of crop. In rotation systems, a grain crop is often grown the first year, followed by a leafy-vegetable crop in the second year, and pasture crop in the third. The last usually contains legumes (e.g. clover, alfalfa), because such plants can restore nitrogen to the soil through the action of bacteria that live in nodules on their roots.
In irrigation agriculture, in which water is brought in to supply the needs of crops in an area with insufficient rainfall, a particular soil-management problem that develops is the salinization (concentration of salts) of the surface soil. This most commonly results from inadequate drainage of the irrigated land; because the water cannot flow freely, it
evaporates, and the salts dissolved in the water are left on the surface of the soil. Even though the water does not contain a large concentration of dissolved salts, the accumulation over the years can be significant enough to make the soil unsuitable for crop production. Effective drainage solves the problem; in many cases, drainage canals must be constructed, and drainage tiles must be laid beneath the surface of the soil. Drainage also requires the availability of an excess of water to flush the salts from the surface soil. In certain heavy soils with poor drainage, this problem can be quite severe; for example, large areas of formerly irrigated land in the Indus basin, in the Tigris- Euphrates region, in the Nile Basin, and in the Western United States, have been seriously damaged by salinization.

11. The areas most prone to salinization are

(a) those irrigated with well-water.
b) those in which crop rotation is not practiced.
(c) sub-tropical forests.
(d) flat land irrigated from reservoirs.

12. The most appropriate title to his passage is

(a) Problems of soil erosion
(b) Agriculture in Volcanic islands.
(c) The importance of chemical fertilizers.
(d) Causes of and remedies of soil-infertility.

13. Natural fertility exhausts most quickly in

(a) river valley lands
(b) humid tropical forests
(c) volcanic areas
(d) lands near urban areas

14. The factor that can restore fertility to the soil not mentioned in the passage is

(a) alluvium brought by rivers
(b) bacterial action
(c) fertilizer fixation through lightning
(d) organic manure

15. Crop rotation helps to

I. increase the farmer's seasonal income.
II. preserve soil condition.
III. desalinize the soil.
IV. destroy pests.

(a) I, II, III & IV
(b) I, II & IV only
(c) II & IV only
(d) II, III & IV only

16. One of the characteristics of agricultural land in Nile basin is

(a) it contains a lot of bacteria.
(b) it consists of heavy soil with poor drainage properties.
(c) the Nile water contains an excess of salts.
(d) it contains nutritive minerals.

Scientism has left humanity in our technical mastery of inanimate nature, but improvised us in our quest for an answer to the riddle of the universe and of our existence in it. Scientism has done worse than that with respect to our status as social beings, that is, to our life with our fellow human beings. The quest for the technical mastery of social life, comparable to our mastery over nature, did not find scientism at a loss for an answer: reason suggested that physical nature and social life were fundamentally alike and therefore proposed identical methods for their domination. Since reason in the form of causality reveals itself most plainly in nature, nature became the model for the social world and the natural sciences the image of what the social sciences one day would be. According to scientism, there was only one truth, the truth of science, and by knowing it, humanity would know all. This was, however, a fallacious argument, its universal acceptance initiated an intellectual movement and a political technique which retarded, rather than furthered, human mastery of the social world.

The analogy between the natural and social worlds is mistaken for two reasons. On the one hand human action is unable to model the social world with the same degree of technical

perfection that is possible in the natural world. On the other hand, the very notion that physical nature is the embodiment of reason from which the analogy between natural and social worlds derives, is invalidated by modern scientific thought itself.
Physical nature, as seen by the practitioner of science consists of a multitude of isolated facts over which human action has complete control. We know that water boils at a temperature of 212 degrees Fahrenheit and, by exposing water to this temperature, we can make it boil at will. All practical knowledge of physical nature and all control over it are essentially of the same kind.

Scientism proposed that the same kind of knowledge and of control held true for the social world. The search for a single cause, in the social sciences, was but a faithful copy of the method of the physical sciences. Yet in the social sphere, the logical coherence of the natural sciences finds no adequate object and there is no single cause by the creation of which one can create a certain effect at will. Any single cause in the social sphere can entail an indefinite number of different effects, and the same effect can spring from an indefinite number of different effects, and the same effect can spring from an indefinite number of different causes.

17. The author's attitude towards the application of scientism to the social sciences is best described as one of

(a) committed scrutiny
(b) dismissal
(c) criticism
(d) approval

18. According to the author, causes and effects in the social world are

(a) unrelated to each other
(b) difficult to identify or predict.
(c) subject to manipulation at will.
(d) reducible to a single cause for each effect.

19. Which of the following statements about scientism is best supported by the passage?

(a) Scientism provides the basis for mastery of the social world
(b) Scientism is only superficially concerned with cause-and – effect relationships
(c) Scientism is poorly suited to explain social behavior
(d) Scientism is no longer applicable to the study of the natural sciences.

20. As is used in the passage, the term 'scientism' can best be defined as

(a) belief that the methods of the physical sciences can be applied to all fields of enquiry
(b) faith that human beings can master their own physical limitations.
(c) desire to keep the social sciences separate from the physical sciences
(d) opinion that scientists must take moral responsibility for their actions

21. In the passage, the author is most concerned with doing which of the following?

(a) Upholding the primacy of reason over superstition
(b) Attacking a particular approach to the social sciences
(c) Describing a method for achieving control over human social behavior
(d) Demonstration the superiority of the social sciences over the natural sciences.

From a vantage point in space, an observer could see that the Earth is engaged in a variety of motions. First, there is its rotation on its own axis, causing the alternation of day and night. This rotation, however, is not altogether steady. Primarily because of the moon's gravitational action, the Earth's axis wobbles like that of an ill-spun top. In this motion, called 'precession', the North and South Poles each traces out the base of a cone in space, completing a circle every 25,800 years, In addition, as the Sun and the Moon change their positions with respect to the Earth, their changing gravitational effects result in a slight 'nodding' of the earth's axis, called 'mutation', which is superimposed on precession. The Earth completes one of these 'nods' every 18.6 years.

The earth also, of course, revolves round the Sun, in a 6-million mile journey that takes 365.25 days. The shape of this orbit is an ellipse, but it is not the center of the Earth that follows the elliptical path. Earth and Moon behave like an asymmetrical dumb-bell, and it is the center of mass of this dumb-bell that traces the ellipse around the sun. The center of the Earth-Moon mass lies about 3000 miles away from the center of the Earth, and the Earth thus moves in an S-curve that crosses and recrosses its orbital path. Then too, the Earth accompanies the sun in the sun's movements: first, through its local star cloud, and second, in a great sweep around the hub of its galaxy, the Milky Way that takes 200 million years to complete.

22. The passage is most likely directed towards an audience of

(a) geologists.
(b) astronauts.
(c) meteorologists interested in weather prediction.
(d) person with little technical knowledge of astronomy.

23. Which of the following best describes the main subject of the passage?

(a) The various types of the Earth's motions
(b) Past changes in the Earth's position
(c) The moon gravitational effect on the earth
(d) Oddities of the Earth's rotation of its axis.

24. The passage indicates that a single cycle of which of the following motions is completed in the shortest period of time?

(a) Mutation.
(b) Precession.
(c) The Earth's rotation on its axis.
(d) The movement of the dumb-bell formed by the center of mass of Earth-Moon.

25. Which of the following techniques does the author use in order to make the descriptions of motion clear?

I. Comparison with familiar objects.
II. Reference of geometric forms.
III. Allusions to the works of other authors.
(a) I only (b) II only (c) I and II only (d) II and III only.

The connective tissues are heterogeneous group of tissues derived from the mesenchyme, a meshwork of stellate cells that develop in the middle layer of the early embryo. They have the general function of maintaining the structural integrity of organs, and providing cohesion and internal support for the body as a whole. The connective tissues include several types of fibrous tissue that vary only in their density and cellularity, as well as more specialized variants ranging from adipose tissue through cartilage to bone. The cells that are responsible for the specific function of an organ are referred to as it parenchyma, while the delicate fibrous meshwork that blinds the cells together into functional units, the fibrous partitions or septa that enclose aggregations of functional units, and the dense fibrous capsule that encloses the whole organ, collectively make up its connective-tissue framework, or stroma. Blood vessels, both large and small, course through connective tissues, which is therefore closely associated with the nourishment of tissues and organs throughout the body. All nutrient materials and waste products exchanged between the organs and the blood must traverse peri-vascular spaces occupied by connective tissue. One of the important functions of the connective – tissue cells is to maintain conditions in the extra-cellular spaces that favour this exchange.

Some organs are suspended from the wall of a body cavity by thin sheets of connective tissues called mesenteries; others are embedded in adipose tissue a form of a connective tissue in which the cells are specialized for the synthesis and storage of energy-rich reserves of fat, or lipid. The entire body is supported from within by a skeleton composed of bone, a type of connective tissue endowed with great resistance to stress owing to its highly ordered, laminated structure and to its hardness, which results from deposition of mineral salts in its fibres and amorphous matrix. The individual bones of the skeleton are held firmly together by ligaments, and muscles are attached to bone by tendons, both of which are examples of dense connective tissue in which many fibre bundles are associated in parallel array to provide great tensile strength. At joints, the articular surfaces of the bones are covered with cartilage, a connective tissue with an abundant intercellular substance that gives it a firm consistency well adopted to permit smooth gliding movements between the opposed surfaces. The synovial membrane, which lines the margins of the joint cavity and lubricates and nourishes the joint surfaces, is also a form of connective tissue.

26. The passage has most probably been taken from a book on

(a) neurology (b) nutrition (c) physiology (d) calisthenics

27. Mesenteries are

(a) adipose tissue in which some organs are embedded.
(b) referred to as parenchyma, and are responsible for specific functions of an organ.

(c) thin sheets from which some organs are suspended.
(d) cells through which blood flows.

28. Through peri-vascular spaces exchange takes place between

(a) blood and organs.
(b) cells and embryo.
(c) nutrients and waste products.
(d) septa and stroma.

29. Some instances of connective tissues are

I. Cartilage II. Stroma
III. Lipid IV. Synovia

(a) I, II, III & IV
(b) I, III & IV only
(c) I, II, & IV only
(d) I and II only

Emile Durkheim, the first person to be formally recognized as a sociologist and the most scientific of the pioneers, conducted a study that stands as a research model for sociologists today. His investigation of suicide was, in fact, the first sociological study to use statistics. In suicide (1964, originally published in 1897) Durkheim documented his contention that some aspects of human behaviour – even something as allegedly individualistic as suicide – can be explained without reference to individuals.

Like all of Durkheim's work, suicide must be viewed within the context of his concern for social integration. Durkheim wanted to see if suicide rates within a social entity (for example, a group, organization, or society) are related to the degree to which individuals are socially involved (integrated and regulated). Durkheim describes three types of suicide: egoistic, anomic, and altruistic. Egoistic suicide is promoted when individuals do not have sufficient social ties. Since single (never married) adults, for example, are not heavily involved with the family life, they are more likely to commit suicide than are married adults. Altruistic suicide on the other hand, is more likely to occur when social integration is too strong. The ritual suicide of Hindu widows on their husbands funeral pyres is one example. Military personnel, trained to lay down their lives for their country, provide another illustration.

Durkheim's third type of suicide – anomic suicide increases when the social regulation of individuals is disrupted. For example, suicide rates increase during economic depressions. People who suddenly find themselves without a job or without hope of finding one are more prone to kill themselves. Suicides may also increase during period of prosperity. People may loosen their social ties by taking new jobs, moving to new communities, or finding new mates.

Using data from the government population reports o several countries (much of it from the French Government Statistical Office), Durkheim found strong support for his line reasoning. Suicide rates were higher among single than married people, among military personnel than

civilians, among divorced than married people, and among people involved in nationwide economic crises.

It is important to realize that Durkheim's primary interest was not in the empirical (observations) indicators he used such as suicide rates among military personnel, married people, and so forth. Rather, Durkheim used the following indicators to support several of his contentions: (1) Social behavior can be explained by social rather than psychological factors; (2) suicide is affected by the degree of integration and regulation within social entities; and (3) Since society can be studied scientifically, sociology is worthy of recognition in the academic world. Durkheim was successful on all three counts.

30. In his study of suicide Durkheim's main purpose was

(a) to document that suicide can be explained without reference to the individual.
(b) to provide an explanation of the variation in the rate of suicide across societies.
(c) to categorize various types of suicides.
(d) to document that social behavior can be explained by social rather than psychological factors.

31. Single adults not heavily involved with family life are more likely to commit suicide. Durkheim categorized this as

(a) anomic suicide. (b) altruistic suicide. (c) egoistic suicide.
(d) Both (b) and (c)

32. According to Durkheim, suicide rates within a social entity can be explained in terms of

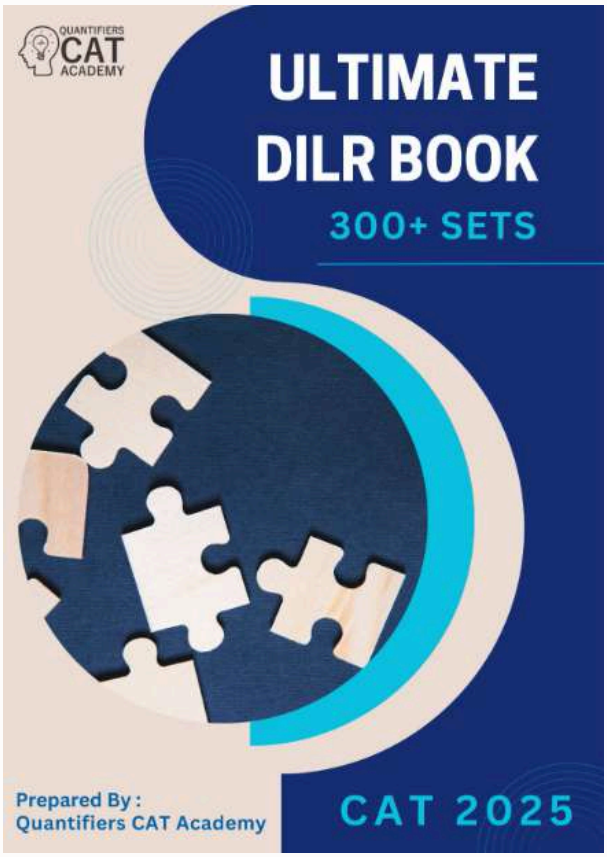
(a) absence of social ties.
(b) disruption of social regulation.
(c) nature of social integration
(d) All of the above.

33. Basing himself on his own indicators. Durkheim was

(a) right on some counts, not others.
(b) vindicated on all counts.
(c) wrong but did not realize that he was right.
(d) substantially correct but formally wrong.

34. To support his contentions, Durkheim relied on the following indicators

(a) social behaviour is explicable predominantly through social factors.
(b) suicide is contingent upon the degree of regulation and interaction.
(c) recognizing sociology is to acknowledge that society is susceptible to scientific investigation.
(d) All of the above.



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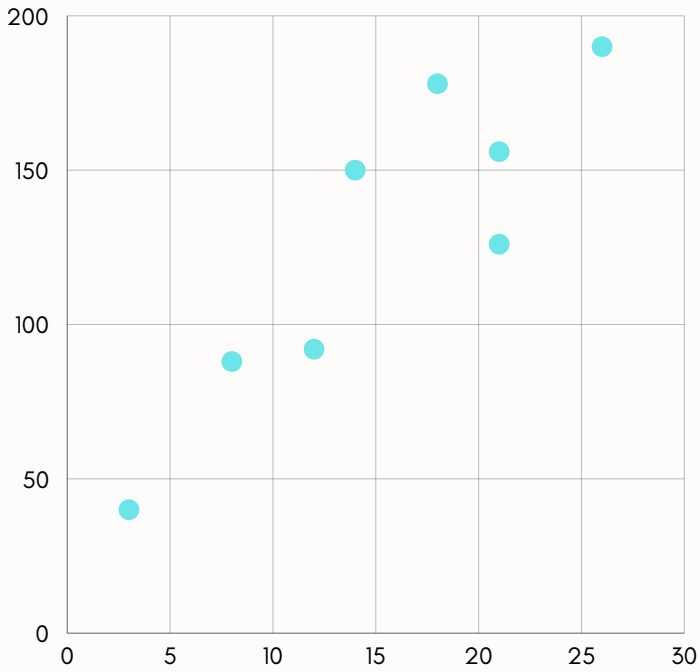

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QUANTIFIERS CAT ACADEMY

CAT 2016 DILR

Recently, the answers of a test held nationwide were leaked to a group of unscrupulous people. The investigative agency has arrested the mastermind and nine other people A, B, C, D, E, F, G, H and I in this matter. Interrogating them, the following facts have been obtained regarding their operation. Initially the mastermind obtains the correct answer-key. All the others create their answer-key from one or two people who already possess the same. These people are called his/her "sources". If the person has two sources, then he/she compares the answer-keys obtained from both sources. If the key to a question from both sources is identical, it is copied, otherwise it is left blank. If the person has only one source, he/she copies the source's answers into his/her copy. Finally, each person compulsorily replaces one of the answers (not a blank one) with a wrong answer in his/her answer key.

The paper contained 200 questions; so the investigative agency has ruled out the possibility of two or more of them introducing wrong answers to the same question. The investigative agency has a copy of the correct answer key and has tabulated the following data. These data represent question numbers.

Name	Wrong Answer (s)	Blank Answer (s)
A	46	---
B	96	46, 90, 25
C	27, 56	17, 46, 90
D	17	---
E	46, 90	---
F	14, 46	92, 90
G	25	---
H	46, 92	---
I	27	17, 26, 90

1. Which one among the following must have two sources?
(1) A (2) B (3) C (4) D

2. How many people (excluding the mastermind) needed to make answer keys before C could make his answer key?
(1) 2 (2) 3 (3) 4 (4) 5

3. Both G and H were sources to
(1) F (2) B (3) I (4) None of the nine.

4. Which of the following statements is true?
(1) C introduced the wrong answer to question 27.
(2) E introduced the wrong answer to question 46.
(3) F introduced the wrong answer to question 14.
(4) H introduced the wrong answer to question 46.

A leading socialite decided to organize a dinner and invited a few of her friends. Only the host and the hostess were sitting at the opposite ends of a rectangular table, with three persons along each side. The pre-requisite for the seating arrangement was that each person must be seated such that atleast on one side it has a person of opposite sex. Maqbool is opposite Sobha, who

is not the hostess. Ratan has a woman on his right and is sitting opposite a woman. Manisha is sitting to the hostess's right, next to Dhirubhai. One person is seated between Madhuri and Urmila who is not the hostess. The men were Maqbool, Ratan, Dhirubhai and Jackie, while the women were Madhuri, Urmila, Sobha and Manisha.

5. The eighth person present, Jackie, must be

I. the host

II. Seated to Sobha's right

III. Seated opposite Urmila

a. I only

b. III only

c. I and II only

d. III and II only

6. Which of the following persons is definitely not seated next to a person of the same sex?

a. Maqbool

b. Madhuri

c. Jackie

d. Sobha

7. If Ratan would have exchanged seats with a person four places to his left, which of the following would have been true after the exchange?

I. No one was seated between two persons of the opposite sex. (e.g. no man was seated between two women)

II. One side of the table consisted entirely of persons of the same sex.

III. Either the host or the hostess changed seats

a. I only

b. II only

c. I and II only

d. II and III only

8. If each person is placed directly opposite her spouse, which of the following pairs must be married?

a. Ratan and Manisha

b. Madhuri and Dhirubhai

c. Urmila and Jackie

d. Ratan and Madhuri

Q9 – 12 : are based on the following table and information given below:

In 1984 – 85 value of exports of manufactured articles exceeds over the value of exports of raw materials by 100%. In 1985 – 86 the ratio of % of exports of raw material to that of exports of manufactured articles is 3 : 4. Exports of food in 1985 – 86 exceeds the 1984 – 85 figures by Rs. 1006 crore.

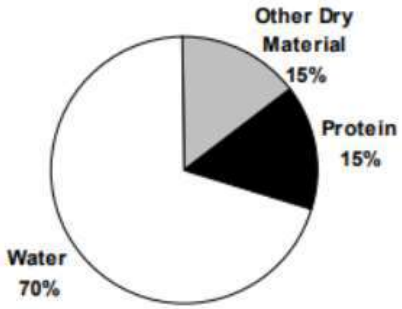
Item	1984-85	1985-86
Food		23%
Manufactured Articles		
Raw Material		
Total Value of Exports in Crore of Rs.	22400	25800

9. In 1984 – 85 what percentage of total values of exports accounts for items related to food
a.23%
b.29.2%
c.32%
d.22%
10. During 1984 – 85, how much more raw material than food was exported?
Rs. 2580 crore
Rs. 896 crore
Rs. 1986 crore
Rs. 1852 crore
11. Value of exports of raw materials during 84 – 85 was how much percent less than that for 85 – 86?
A. 39
B. 46.18
C. 7
D. 31.6

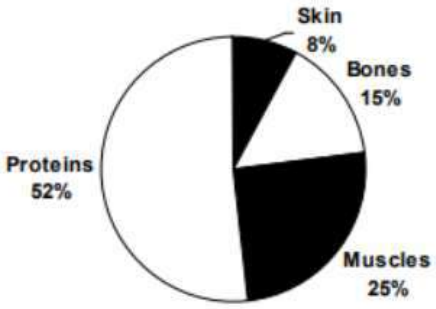
12. The change in value of exports of manufactured articles from 1984 – 85 to 1985 – 86 is
A. 296 crore
B. 629 crore
C. 2064 crore
D. 1792 crore

13. Q13-16: Refer to the pie-chart given below:

Distribution of material in Ghosh Babu's body (as % of total body weight)



Occurance of Proteins in different organ's of Ghosh Babu's body



13. What fraction of Ghoshbabu's weight consists of muscular and skin protein?
A. 1/13
B. 1/30

C. 1/20
D. Cannot be determined

14. Ratio of distribution of protein in muscle to the distribution of protein in skin is
A. 3:1
B. 3:10
C. 1:3
D. 7:2

15. What percent of Ghosh Babu's body weight is made up of skin ?
A. 0.15
B. 10
C. 1.2
D. Cannot be determined

16. In terms of total body weight, the portion of material other than water and protein is closest to
A. 3/20
B. 1/15
C. 85/100
D. 1/20

Q17-20: Study the information below and answer the questions based on it.
A, B, C, D, E, F and G are brothers. Two brothers had an argument and A said to B "You are as old as C was when I was twice as old as D, and will be as old as E was when he was as old as C is now". B said to A " You may be older than F but G is as old as I was when you were as old as G is, and D will be as old as F was when F will be as old as G is".
17. Who is the eldest brother?
A. A
B. E
C. C
D. Cannot be determined

18. Who is the youngest brother?
A. B
B. D
C. F
D. C

19. Which two are probably twins?
A. A and B
B. D and G
C. E and B
D. Cannot be determined

20. Which of the following is false?
A. G has 4 elder brothers
B. A is older than G but younger than E.
C. B has three elder brothers.
D. There is a pair of twins among the brothers

Q21 – 24 : Study the information below and answer questions based on it.

Teams	Games Played	Won	Goals For	Goals Against	Point
Germany	2	2	3	1	6
Argentina	2	2	2	0	6
Spain	2	1	5	2	3
Pakistan	2	1	2	1	3
New Zealand	2	0	1	6	0
South Africa	2	0	1	4	0

In the third round, Spain played Pakistan, Argentina played Germany, and New Zealand played South Africa. All the third round matches were drawn. The following are some results from the fourth and fifth round matches.
(a) Spain won both the fourth and fifth round matches.
(b) Both Argentina and Germany won their fifth round matches by 3 goals to 0.
(c) Pakistan won both the fourth and fifth round matches by 1 goal to 0.

21. Which one of the following statements is true about matches played in the first two rounds?
A. Pakistan beat South Africa by 2 goals to 1.
B. Argentina beat Pakistan by 1 goal to 0.
C. Germany beat Pakistan by 2 goals to 1.
D. Germany beat Spain by 2 goals to 1.

22. Which one of the following statements is true about matches played in the first two rounds?
A. Germany beat New Zealand by 1 goal to 0
B. Spain beat New Zealand by 4 goals to 0
C. Spain beat South Africa by 2 goals to 0.
D. Germany beat South Africa by 2 goals to 1

23. If Pakistan qualified as one of the two teams from Pool A, which was the other team that qualified?
A. Argentina
B. Spain
C. Germany
D. Cannot be determined

24. Which team finished at the top of the pool after five rounds of matches?
A. Argentina
B. Germany
C. Spain
D. Cannot be determined

Q25 – 28: are based on the following information :
The following table gives the sales details for text books and reference books at Primary/Secondary/Higher Secondary/Graduate Levels.

Year	Primary	Secondary	Higher Secondary	Graduate Level
1975	42137	8820	65303	25343
1976	53568	10285	71602	27930
1977	58770	16437	73667	28687
1978	56872	15475	71668	30057
1979	66213	17500	78697	33682
1980	68718	20177	82175	36697

25. What is the growth rate of sales of books at primary school level from 1975 to 1980?
A. 29%
B. 51%
C. c.63%
D. 163%

26. Which of the categories shows the lowest growth rate from 1975 to 1980?
A. Primary
B. Secondary
C. Higher Secondary
D. Graduate Level

27. Which category had the highest growth rate in the period?
A. Primary
B. Secondary
C. Higher Secondary
D. Graduate Level

28. Which of the categories had either a consistent growth or a consistent decline in the period shown?
A. Primary
B. Secondary
C. Higher Secondary
D. Graduate Level

Q29 – 32 : Study the information below and answer questions based on it.

The table below presents the revenue (in million rupees) of four firms in three states. These firms, Honest Ltd., Aggressive Ltd., Truthful Ltd. and Profitable Ltd. are disguised in the table as A, B, C and D, in no particular order.

States	Firm A	Firm B	Firm C	Firm D
UP	49	82	80	55
Bihar	69	72	70	65
MP	72	63	72	65

Further, it is known that: In the state of MP, Truthful Ltd. has the highest market share. Aggressive Ltd.'s aggregate revenue differs from Honest Ltd.'s by Rs. 5 million.

Q. 29 What can be said regarding the following two statements?
Statement 1: Profitable Ltd. has the lowest share in MP market.
Statement 2: Honest Ltd.'s total revenue is more than Profitable Ltd.
A. If Statement 1 is true then Statement 2 is necessarily true.
B. If Statement 1 is true then Statement 2 is necessarily false.
C. Both Statement 1 and Statement 2 are true.
D. Neither Statement 1 nor Statement 2 is true.

30. What can be said regarding the following two statements?
Statement 1: Aggressive Ltd.'s lowest revenues are from MP.
Statement 2: Honest Ltd.'s lowest revenues are from Bihar.
A. If Statement 2 is true then Statement 1 is necessarily false.
B. If Statement 1 is false then Statement 2 is necessarily true.
C. If Statement 1 is true then Statement 2 is necessarily true.
D. None of the above

31. What can be said regarding the following two statements?
Statement 1: Honest Ltd. has the highest share in the UP market.
Statement 2: Aggressive Ltd. has the highest share in the Bihar market.
A. Both statements could be true
B. At least one of the statements must be true.
C. At most one of the statements is true.
D. None of the above

32. If Profitable Ltd.'s lowest revenue is from UP, then which of the following is true?
A. Truthful Ltd.'s lowest revenues are from MP.
B. Truthful Ltd.'s lowest revenues are from Bihar.
C. Truthful Ltd.'s lowest revenues are from UP.
D. No definite conclusion is possible.

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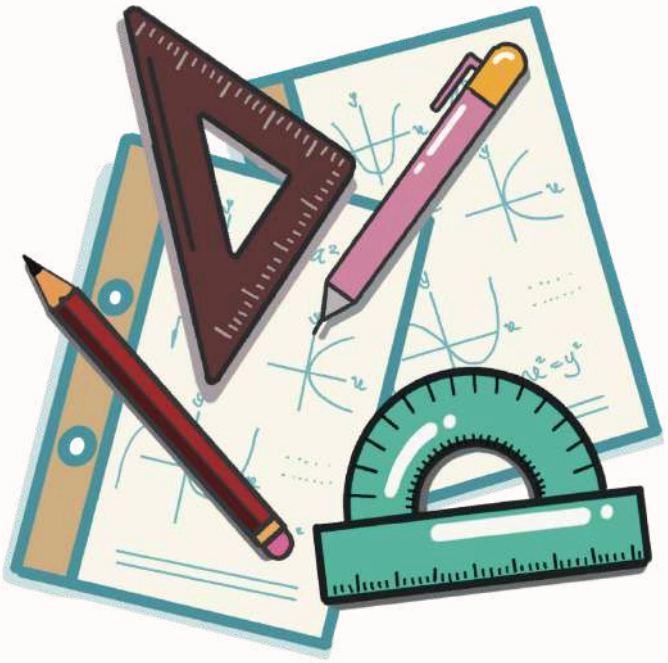

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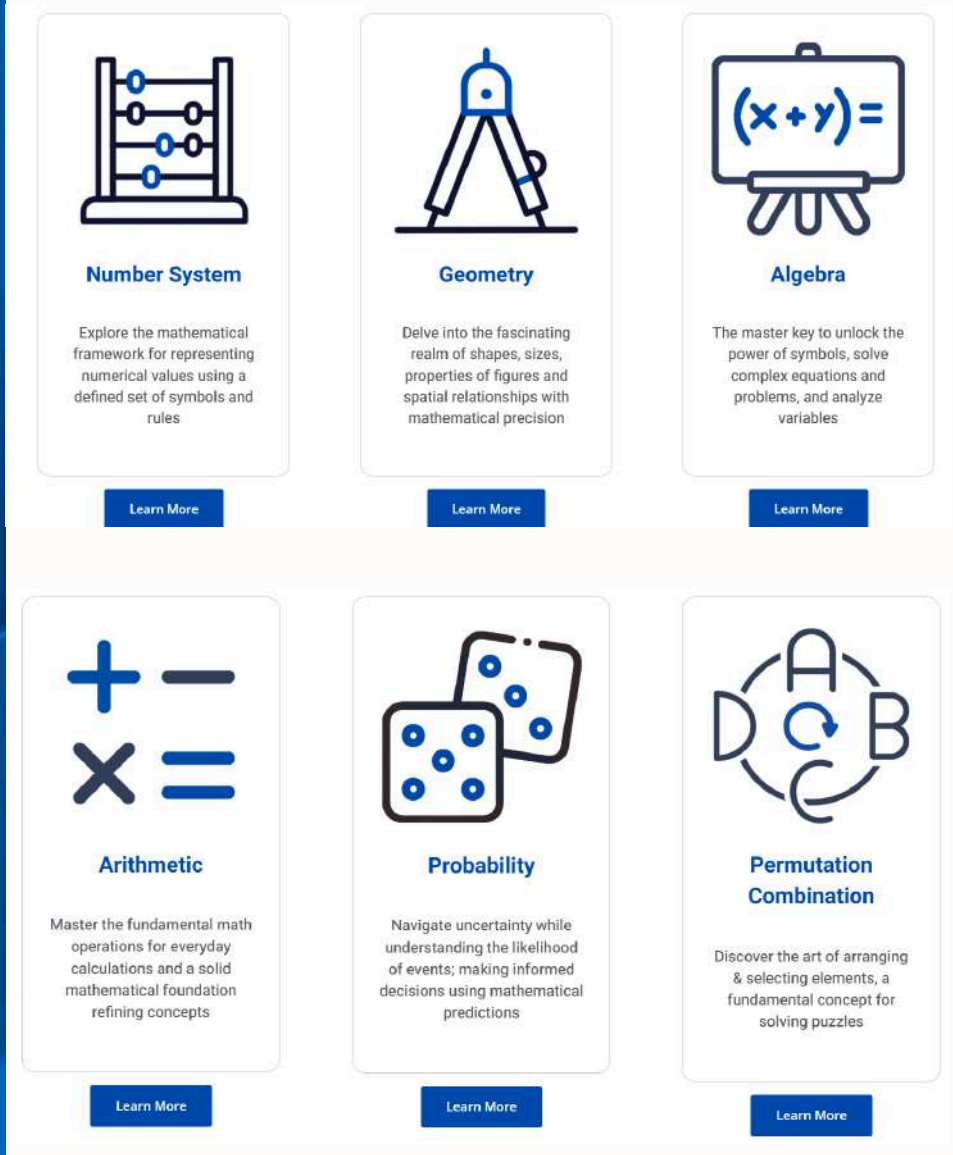

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CAT 2016 Quant

1. If a circular sheet is divided by its 4 chords in various regions, then find the maximum number of regions in which circle can be divided.
A. 10
B. 11
C. 12
D. 9

2. Four consecutive prime numbers are arranged in ascending order. The product of the first three numbers is 7429 and that of the last three numbers is 12673. Find the sum of the first and last numbers.
A. 42
B. 46
C. 39
D. 41

3. A milk man adds 23 litres of freely available water to 92 litres of milk. He sells the mixtures at a price which is 12% less than the price of pure milk. Find the overall profit percentage.
A. 10%
B. 12%
C. 8%
D. 15%

4. If $x + 1$, $x + b$, $x + 6$ are in Geometric Progression, where x and b are positive integers, then b is
A. 2
B. 3
C. 4
D. 5

5. The compound interest earned on a principal amount at 5%, compounded annually, during 3rd year is Rs. 220.5. Find the principal amount (in Rs.).
A. 3000
B. 4000
C. 5000
D. 6000

6. Instead of a metre scale, a cloth merchant uses a 120 cm scale while buying, but uses an 80 cm scale while selling the same cloth. If he offers a discount of 20% on cash payment, what is his overall profit percentage?
A. 25%
B. 15%
C. 20%
D. 30%

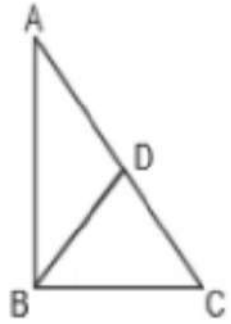
7. A salesman enters the quantity sold and the price into the computer. Both the numbers are two-digit numbers. But, by mistake, both the numbers were entered with their digits interchanged. The total sales value remained the same, i.e. Rs. 1,148, but the inventory reduced by 54. What is the actual price per piece?

A. 82
B. 41
C. 6
D. 28

8. A watch dealer incurs an expense of Rs. 150 for producing every watch. He also incurs an additional expenditure of Rs. 30,000, which is independent of the number of watches produced. If he is able to sell a watch during the season, he sells it for Rs. 250. If he fails to do so, he has to sell each watch for Rs. 100. If he is able to sell only 1,200 out of 1,500 watches he has made in the season, then he has made a profit of

A. 80000
B. 75000
C. 55000
D. 45000

9. In ΔABC, $\angle B$ is a right angle, AC = 6 cm, and D is the mid-point of AC. The length of BD



is

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

10 . If three positive real numbers x, y, z satisfy y – x = z – y and xyz = 4, then what is the minimum possible value of y?

A. 2^1/3
B. 2^2/3
C. 2^1/4
D. 2^3/4

11. Given the quadratic equation $x^2 – (A – 3)x – (A – 2)$, for what value of A will the sum of the squares of the roots be zero?

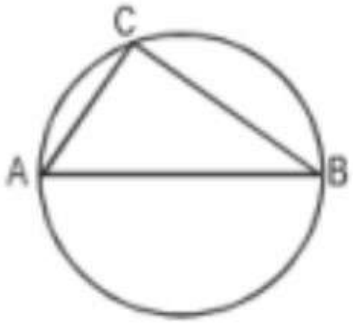
A. 3

B. -3
C. -2
D. None of these

12. A, S, M and D are functions of x and y, and they are defined as follows.
A(x, y) = x + y
S(x, y) = x – y
M(x, y) = xy
D(x, y) = x / y
$y \neq 0$
What is the value of M(M(A(M(x, y), S(y, x)), x), A(y, x)) for x = 2, y = 3?
A. 60
B. 20
C. 125
D. 70

13. If n is any odd number greater than 1, then $n(n^2 - 1)$ is
A. divisible by 96 always
B. divisible by 48 always
C. divisible by 24 always
D. None of these

14. The figure shows a circle of diameter AB and radius 6.5 cm.



If chord CA is 5 cm long, find the area of ΔABC
A. 60
B. 25
C. 30
D. 20

15. A man travels three-fifths of a distance AB at a speed 3a, and the remaining at a speed 2b. If he goes from B to A and return at a speed 5c in the same time, then
A. 1/a + 1/b = 1/c
B. 1/a + 1/b = 2/c
C. a + b = c
D. None of these

16. I sold two watches for Rs. 300 each, one at the loss of 10% and the other at the profit of 10%. What is the percentage of loss(–) or profit(+) that resulted from the transaction?
A. +10
B. -10
C. +1
D. -1

17. In a watch, the minute hand crosses the hour hand for the third time exactly after every 3 hr 18 min and 15 s of watch time. What is the time gained or lost by this watch in one day?
A. 14 min 10 s lost
B. 13 min 50 s lost
C. 13 min 20 s gained
D. 4 min 40 s gained

18. A series S1 of five positive integers is such that the third term is half the first term and the fifth term is 20 more than the first term. In series S2, the nth term defined as the difference between the (n+1) term and the nth term of series S1, is an arithmetic progression with a common difference of 30.
Second term of S2 is
A. 50
B. 60
C. 70
D. None of these

19. What is the average value of the terms of series S1?
A. 60
B. 70
C. 80
D. Average is not an integer

20. If $\log_{10} x - \log_{10} \sqrt{x} = 2 \log x\ 10$, then a possible value of x is given by
($_{10}$ means to the base 10)
A. 10
B. 1/100
C. 1/1000
D. None of these

21. What is the sum of all two-digit numbers that give a remainder of 3 when they are divided by 7?
A. 666
B. 676
C. 683
D. 777

22. There are 12 towns grouped into four zones with three towns per zone. It is intended to connect the towns with telephone lines such that every two towns are connected with three direct lines if they belong to the same zone, and with only one direct line otherwise. How many direct telephone lines are required?

A. 72
B. 90
C. 96
D. 144

23. If both a and b belong to the set {1, 2, 3, 4}, then the number of equations of the form ax^2 + bx + 1 = 0 having real roots is

A. 5
B. 7
C. 8
D. 6

24. The points of intersection of three lines 2X + 3Y – 5 = 0, 5X – 7Y + 2 = 0 and 9X – 5Y – 4= 0

A. form a triangle
B. are on lines perpendicular to each other
C. are on lines parallel to each other
D. are coincident

25. What value of x satisfies x^2/3 + x^1/3 - 2 ≤ 0?

A. $-8 \leq x \leq 1$
B. $-1 \leq x \leq 8$
C. $1 < x < 8$
D. $-8 \leq x \leq 8$

26. A man has 9 friends: 4 boys and 5 girls. In how many ways can he invite them, if there have to be exactly 3 girls in the invitees?

A. 140
B. 160
C. 120
D. 180

27. Out of two-thirds of the total number of basketball matches, a team has won 17 matches and lost 3 of them. What is the maximum number of matches that the team can lose and still win more than three fourths of the total number of matches, if it is true that no match can end in a tie?

A. 4
B. 5
C. 6
D. 3

28. Ram starts working on a job and works on it for 12 days and completes 40% of the work. To help him complete the work, he employs Ravi and together they work for another 12 days and the work gets completed. How much more efficient is Ram than Ravi?
A. 50%
B. 200%
C. 60%
D. 100%

29. One Indian, one Chinese and one Japanese worked for a company for the same period. The Indian is twice as efficient as Chinese and the Chinese is thrice as efficient as a Japanese. If Rs. 10,00,000 were given to all the three together, then calculate the amount received by the Chinese and the Japanese together.
A. Rs. 8, 00, 000
B. Rs. 4, 00, 000
C. Rs. 9, 00, 000
D. Rs. 6, 50, 000

30. Find the remainder when 10^34 – 7 is divided by 3.
A. 0
B. 1
C. 2
D. None of these

31. Using only coins of value 2,5,10,25,50 and 100, distribute the minimum number of coins possible to 4 people who need 57, 95, 126 and 27 in value respectively.
A. 14
B. 15
C. 17
D. 18

32. Praveen buys two cans of milk from a manufacturer. The two cans are diluted to the same extent. To can 1 Praveen replaces 10 litres of the solution with pure milk and the concentration of milk becomes twice of what it was.To can 2 he replaces 20 litres with pure milk, what is the ratio of concentration of can 1 initially to that in can 2 finally.
A. 1 : 1.5
B. 1 : 2
C. 1 : 3
D. cannot be determined

33. A picnic invites two kinds of charges: bus fare, which is independent of the number of people attending the picnic and buffet lunch, which increases directly with an increase in the number of people. The charges are calculated to be Rs. 165 per head when there are 200 invitees and Rs. 170 per head when there are 150 invitees. What would be the charges per head when there are 100 invitees?
A. 175

B. 180
C. 120
D. 160

34. In a public school there is an increase in number of admissions every year. The number of students in the year 2000 was 780 and it increased to 3000 in the year 2005.Find the annual increase?
A. 25%
B. 31%
C. 39%
D. 20%

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Solutions:
Verbal Ability

1. BDAC –
B shows the problem faced by a researcher, D. elaborates why this happens, A continues with it and C., by using 'however' introduces the way out of the problem.

2. DABC - D starts with 'but' and states why use of electricity in industries poses problems. A. continues with the idea and the word 'also' shows that it should follow D. B. presents an alternate to the costly options by using ' in contrast', C. states another reason to avoid using mineral resources for generating electricity and leads to 6.

3. BDAC - The user of word 'rather' in B. indicates that it should follow 1. D. states that the competition depends on five basic competitive forces, A. continues with the same idea. C. states that not all industries have the same potential and this is elaborated in 6.

4. ABCD - The use of 'these measures' in A. refers to the measures stated in 1., so it should be the first sentence in the series. B talks about the objectives of these measures and C. and D. elaborate on the idea.

5. E is illogically placed. Correct order would be DACB - D introduces an action of the government, A. explains what it is, C. relates it to another action and B. concludes the passage by stating the consequences of the action.

6. C is illogically placed. Correct order is DBEA - D starts with 'once upon a time' indicating that this should be the beginning of the passage. B. talks about how D. prompted Indians to stay closer to Soviet Union, E. states how this could be done and A. elaborates on the same.

7. E is illogically placed. Correct order is CDBA - C introduces an American to the passage, D. states who he was, B. talks about something he said, and A. shows the author's reaction to it.

8. E. The author's contention (argument) is that the French are very fond of junk food because there are so many American
restaurants in Paris. The best way to defeat this argument is to show, if possible, that the French do not eat in those American
restaurants. The closest to that is answer E which suggests that the American tourists are the ones who eat at those restaurants.

9. C. The first part in boldface is a summary statement encapsulating the scientist's observations. The scientist's conclusion is in the next (non-bold) sentence. The critic doubts this conclusion and the second bold-face part is a statement of what he thinks the scientists ought to check. Hence the first part should be termed an observation/finding/ etc. Therefore A cannot be correct as it calls the statement a position (i.e. conclusion). The second part should be termed a suggestion or something similar; it cannot be termed a finding or a conclusion and so we eliminate B and D. E is incorrect as it suggests that the critic disputes the evidence, whereas we disputes the methods and conclusion. Answer C is best.

10. c. The purpose of the passage is to: A. highlight the differences among psychologists regarding the importance of the unconscious mind in making complex decisions.--> out of scope, passage doesn't talk about difference opinions of psychologists, rather it discusses the advantage of one method over the other B. contrast and compare the workings of the rationality with that of deliberate, action-oriented and complex decision. making processes.--> Inconsistent (Rationality works are not compared) C. prove by citing results of experiments that one decision-making process is better than the other.--> Correct , as the whole passage talks about the superiority of the unconscious mind over the conscious mind.Also, the author presents some evidence (results of experiments) in the passage in order to prove that the decision making process of the unconscious mind is better than the decisions making process of the conscious mind D. show that unconscious mind is not that undependable as previously thought.--> Partial scope E. ascertain that using conscious and unconscious minds together yield second-to-none judgements.--> Opposite ans , as the passage says that unconscious mind alone yields best decisions and conscious mind's decision making process is inferior to it

11. d In the lands with insufficient rainfall, where water is brought in from outside for irrigation, salinization can take place.

12. d The passage talks about problems as well as remedies for soil infertility.

13. b Natural fertility exhausts the fastest in humid tropical forests.

14. c The passage does not talk of fertilizer fixation through lightning.

15. c Crop rotation preserves soil and prevents build up of pests.

16. b The Nile basin contains heavy soil with poor drainage properties.

17. c The author criticizes the application of scientism to social sciences.

18. b The last paragraph highlights that in social sphere there is no single cause by the creation of which one can create a certain effect at will.

19. c The author has tried to show that scientism cannot be properly applied to explain social behaviour.

20. a According to scientism there is only one truth the truth of science and the methods of physical science can thus be applied to other fields of enquiry, like the social sciences.

21. b The author has attacked the approach of scientism towards social sciences.

22. d The passage uses comparisons with familiar objects and very simple language, indicating that it is aimed at people with little technical knowledge of astronomy.

23. a The first sentence of the passage shows that the passage is about the variety of motions of the earth.

24. c The Earth's rotation on its axis causes the alternation between day and night, which we all know takes only 24 hours.

25. c The author has used comparisons with objects like a top and references to geometric shapes like cones.

26. c Physiology is a study of the way living things function, hence the passage must have been taken from a book on physiology.

27. c Mesentries are thin sheets of connective tissues from which certain organs are suspended.

28. a The nutrients and waste materials are exchanged between blood and organs through the peri-vascular spaces.

29. c Cartilage, stroma and synovia are examples of connective tissues.

30. a Furkheim was trying to document the fact that something as individualistic as suicide can be explained without reference to individuals.

31. c This was categorised as egoistic suicide.

32. d Durkheim uses all three as explanations for suicide within a social entity.

33. b Durkheim was successful on all three indicators that he based his contentions on.

34. d He has used all the given indicators to support his contentions.

DILR

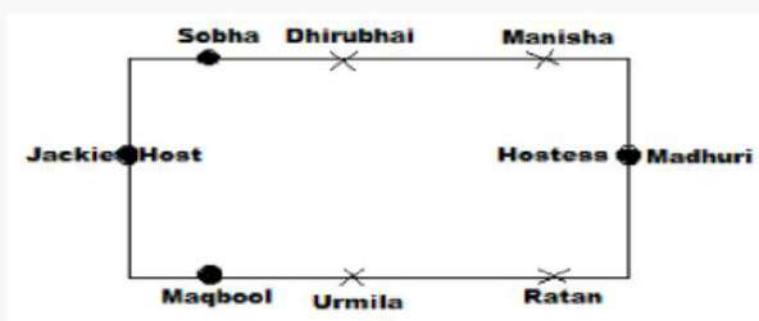
1. 1. A, D and G each one has only one wrong answer and no blank answers. They must have obtained the key from the mastermind directly. A introduced 46 as the wrong answer, D introduced 17 as the wrong answer and G introduced 25 as the wrong answer. Mastermind – A (46), D (17) and G (25). H and E must have obtained the key from A as they got 46 as the wrong answer. H further introduced 92 as the wrong answer and E introduced 90 as the wrong answer.
A(46) => H(46, 92) and E (46, 90).
F must have obtained the key from H and E and found that answers 92 and 90 did not match. He left these blank and introduced 14 as the wrong answer in addition to 46 (which was the same answer though wrong) for H and E. H (46, 92) and E(46, 90) => F(14, 46).
I must have obtained the key from D and E. Answers 17, 46, 90 didn't match and he left these as blank. He also introduced 27 as the wrong answer.
E(46, 90) and D(17) => I (27) [17, 46, 90]
C must have obtained the key from I and introduced 56 as the wrong answer.
I (27) [17, 46, 90] => C (27, 56) [17, 46, 90]
B must have obtained the key from E and G. Answers 25, 46, 90 didn't match and he left these blank. He also marked 96 as the wrong answer.
E(46, 90) and G (25) => B [25, 46, 90]
Therefore, Combining all the above diagrams we see that A and D have only 1 source (mastermind). Even C has only one source.
Only B has 2 sources E and G. Hence, option 2.

2. C obtained the key from I who obtained it from D and E. E obtained it from A. Four people were needed: A, D, E and I. Hence, option 3.

3. From the flow chart above it is clear that, G and H were not the sources to anyone. Hence, option 4. Alternatively, G got question number 25 wrong and none of the other nine people got the same question number wrong. Similarly, H got question number 92 wrong and none of the other nine people got the same question number wrong. G and H were sources to none of the nine. Hence, option 4.

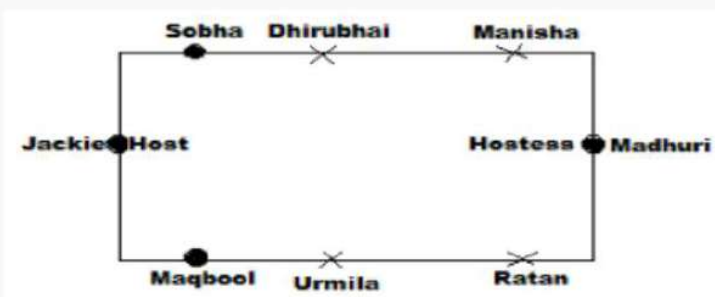
4. From the flowchart we get that, statement 3 is the only true statement. Hence, option 3.

5. Seating arrangement will be as such:'



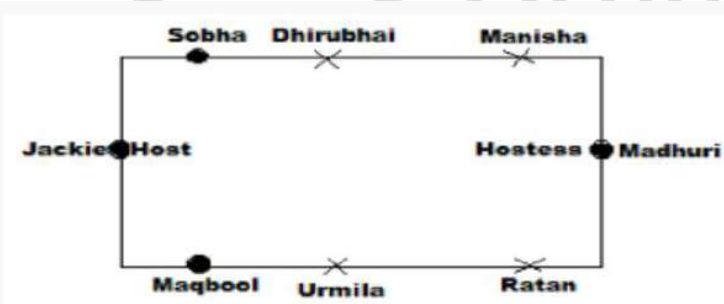
Jackie is the host and sitting to Sobha's right.

6. Correct Answer: D



Sobha is sitting next to Jackie and Dhirubhai. So, she is the only person, who is not seated next to a person of the same sex.

7. Corrcet Answer :1
If Ratan would have exchanged seat with a person four places to his left, which is Sobha, the following arrangement would exist.



Statement (I) is true because no man is sitting between two women and no women is sitting between two men.

8. Correct Answer :8
Among the given choices only Ratan and Manisha are sitting opposite each other and hence they must be married.

9. From the data that is given we can find the following data: (the explanation of how the following values were arrived at is given after the table).

Item	1984-85	1985-86
Food (Percentage)	22%	23%
Food (Value)	4928	5934
Manufactured Articles	11648	11352
Raw Material	5824	8514
Total Value of Exports in Crore of Rs.	22400	25800

Food related exports in 85-86 = 0.23x25800 = 5934. So food related exports in 1984-95 = (5934 – 1006) = 4928.
Hence Percentage of food related exports in 84-85 = 4928/22400 = 22%.

10. Correct answer: B
In 84-85, Value of Manufactured articles & Raw materials exports = (22400 – 4928) = Rs.17472 crores. Since Export in manufactured goods is twice that of raw materials, Rs.17472 has to be divided in the ratio 2:1. viz. Export of manufactured goods = Rs.11648 crores and Raw materials = Rs.5824 crores. Hence the difference between raw material and food = (5824 – 4928) = Rs.896 crores.

11. Correct answer: D
In 85-86, the combined percentage of Manufactured articles and Raw materials = 77% and this is in the ratio 4 : 3. Hence percentage of Manufactured articles export = 44% and that of Raw materials export = 33%. Hence value of manufactured = 0.44x25800 = Rs.11352 crores and the value of Raw materials = Rs.8514 crores. Hence percentage difference between the value of Raw materials between 84-85 and 85-86 = [(8514 – 5824)/8514] × 100 = 31.6%

12. Correct Answer : A
The change in the value of exports from 84-85 to 85-86 = (11648 – 11352) = Rs.296 crores.

13. Correct answer: C
The skin & muscular protein totally constitutes 33% of the total proteins. The total proteins itself is 15% of the total body weight. Hence the percentage of skin & muscular protein as a fraction of the total body weight = 33% of 15% = 5 %. = 1/20.
Required fraction = (8+25)% of 15% = (1/3) x (3/20) = 1/20.

14. Correct answer: A . Required Ratio = 25 : 8 = 3 : 1 (approx.).

15. Correct answer: D. We can determine only the percentage of skin protein in Ghosh Babu's total body weight. But there is no data given about the percentage of skin in Ghosh Babu's body. Hence the answer is (d).

16. Correct Naswer: A. Proportion of material other than water & protein in Ghosh Babu's body is 15/100 = 3/20

17. Correct answer: E
The first statement suggests : B is now as old as C was in the past. Hence B < C.
Also sometime in the past A was twice as old as D. So A > D.
C will be as old as E in future. Hence C < E.
The second statement suggests : A > F. A was as old as G in the past. Hence A > G.
D will be as old as F in future. Hence F > D.
F will be as old as G now in future. Hence G > F.
G was as old as B, when A was as old as G. Hence A = B.
Combining both the results, we get : E > C > B = A > G > F > D (Note by A=B, it is meant that they are of similar age group, not necessarily the same)
It could be figured out that E is the eldest brother

18. Correct answer: B
OA : D (check previous question for arrangement)

19. Correct answer:A
Only A & B could probably be twins.

20. Correct Answer: C
It could be figured out that only statement (c) is false as B has only 2 elder brothers and not 3.
21. Correct Answer : D

Team Round 1 and Round 2 combinations
Goals for → Goals against Goals for → Goals against
Germany 2 → 1 and 1 → 0
Argentina 1 → 0 and 1 → 0
Spain 4 → 0 and 1 → 2 (Not possible)
Spain 5 → 1 and 0 → 1 (Possible)
Pakistan 2 → 0 and 0 → 1
New Zealand 1 → 2 and 0 → 4 (Not possible)
New Zealand 0 → 1 and 1 → 5 (Possible)
South Africa 1 → 2 and 0 → 2

Option D is possible from the above observation.

22. Correct answer: B
Germany beat South Africa by 2 goals to 1

From the statements from (a), (b), (c) given in the problem four teams (Spain, Argentina, Germany, Pakistan) appear to win their matches in the fifth round. However, there are only three matches per round and hence only three teams can win their matches in any round. Hence, the data set appears to be inconsistent.

23. Correct answer: D
OA: D
It has been stated that four teams have won in the fifth round. But only three teams can win a round. Hence, the answer cannot be determined.
24. Correct Answer: D
OA: D
It has been stated that four teams have won in the fifth round. But only three teams can win a round. Hence, the answer cannot be determined.
25. Correct Answer: C
Required percentage growth = (68718 – 42137) 100 / 42137. Students please note that to calculate the exact value of this expression, we need calculator. Since, options given are not very close to each other so we can approximate values. And using approximations we get the value of required ratio = (68600 – 42000) 100 / 42000 = 2650 / 42 = 63%

26. Correct Answer: C

Books	1975	1980	Percentage growth
Primary	42137	68718	66%
Secondary	8820	20177	125%
Higher Secondary	65303	82175	26%
Graduate Level	25343	36697	45%

Hence percentage growth is least for higher secondary books viz.26%.

27. Correct Answer: B
Referring to the table in the previous question, we can see that the percentage growth rate is maximum for secondary level books viz.125%.

28. Correct answer: D
It can be seen from the given table that though primary level books have shown a consistent growth, it has declined in the year 1978. On the other hand even Secondary and Higher secondary level books have shown a consistent increase except for the year 1977 when it had declined. But the graduate level books have shown a consistent growth over the period

29. Correct Answer: B
Truthful Ltd. has the highest market share in MP. Thus Truthful Ltd. could be Firm A or Firm C.
Aggregate revenues of Firms A, B, C and D are 190, 217, 222 and 185 (in million rupees) respectively.
Thus, Aggressive Ltd. and Honest Ltd. could be A and D or B and C in some order.
Case 1: Truthful Ltd. = A Aggressive Ltd. and Honest Ltd. = B and C Profitable Ltd. = D
Case 2: Truthful Ltd. = C Aggressive Ltd. and Honest Ltd. = A and D Profitable Ltd. = B
If statement 1 is true, then Firm B is profitable Ltd. => Honest Ltd. is Firm A or D. But, the total revenue of Firms A and D each is lesser than that of firm B. Thus, if statement 1 is true, statement 2 is necessarily false. Hence, option 2.
30. Correct Answer: C
If statement 1 is true then, Firm B is Aggressive Ltd. This implies that Firm C is Honest Ltd. Firm C's lowest revenues are from Bihar. Thus, statement 2 is necessarily true. Hence, option C
31. Correct Answer: C
The two statements talk about two firms having the highest shares in the UP and Bihar Markets. Thus both the statements refer to Firm B. From the explanation given in the first question, only one of the two statements can be true at a time. Hence, option C

32. Correct answer: C
Profitable Ltd. is firm D (Case 1 from the explanation given earlier).
∴ Truthful Ltd. is firm A.
Thus, Truthful Ltd.'s lowest revenues are from UP. Hence, option C

Quant

1. Correct answer: 11
Shortcut:
General formula for such questions = [n(n+1)/2] + 1
where n is the number of chords
Here, n = 4
So, answer = 4(4+1)/2 + 1 = 11

2. Correct Option: C
Check the nearest cube root of 7429 => which is 8000.
The cube root of 8000 is 20.
By hit and trial using prime numbers around 20, we find that the first three prime numbers would be 17, 19 and 23 as
17 X 19 X 23 = 7429
19 X 23 X y = 12673
y = 29 => last prime number
Sum of first and last prime numbers is 17 + 29 = 46

3. Correct Answer: A
Let price of pure milk/lt = Rs 1
Total = 115 ltrs
Sells this at 0.88 x 115 = 101.2
Profit % = (101.2 - 92)/92 x 100 = 10%

4. Correct Answer: B
$(x+b)^2 = (x+1)(x+6)$
x and b are +ve and $(x+b)^2$ is a perfect square
For x = 1, 2x7 = 14 is not a perfect square
For x = 3, we get 4x9 = 36 a perfect square
So, 3 + b = 6
=> b = 3

5. Correct answer: B
C.I. is the interest on interest.
3rd year interest = 220.50
2nd year interest ->
220.5*100/(100 + 5) = 210
1st year interest ->
210*100/(100 + 5) = 200
Required Principal = 200*100/5 = 4000

6. Correct answer: C
Let CP per cm be Re 1
He buys 120 cm for Rs 100
Sells 80cm for the price of 100cm ie, 80cm for Rs 100
After 20% discount => Sells 80cm for Rs 80

=> 120cm for Rs 120
So, 20% profit

7. Correct Answer: B
Inventory has reduced by 54 units. This means two things: (i) actual quantity sold was less than the figure that was entered the computer (i.e. after interchanging digits), so the unit's place digit of the actual quantity sold should be less than its ten's place digit; and (ii) the difference between the actual quantity sold and the one that was entered in the computer is 54. From question 125, we can figure out that the only answer choice that supports both these conditions is (a), as (82 – 28 = 54). So the actual quantity sold = 28. Now since the total sales is Rs. 1,148, actual price per piece = 1148/28 = Rs. 41.

8. Correct Answer: B
Expenditure = 150n + 30000 , where n is the number of watches produced
For 1500 watches,
CP = 1500x150 + 30000 = 2.55 lakhs
SP = 1200x250 + 300x100 = 3.30 lakhs
Profit = 3.3 - 2.55 lakhs = 75000

9. Corrcet Answer: C
In a right-angled triangle, the length median to the hypotenuse is half the length of the hypotenuse. Hence, BD = 3cm

10 . Correct answer: B
AM ≥ GM
=> (x+y+z)/3 ≥ xyz^(1/3)
3y/3 ≥ 4^(1/3).
=> y ≥ 2^2/3.
Minimum value of y = 2^2/3.

11. Correct Answer: D
Squares are always positive.
Sum of squares of roots = 0
=> Possible only when both roots are 0
=> Sum of roots = 0 => A = 3
and Product of roots = 0 => A = 2
No unique value of A

12. Correct answer: D
M(M(A(M(x, y), S(y, x)), x), A(y, x)) = M(M(A(M(2, 3), S(3, 2)), 2), A(3, 2)) = M(M(A((2x3), (3 - 2)), 2), A(3, 2)) = M(M(A(6, 1), 2), A(3, 2)) = M(M((6 + 1), 2), (3 + 2)) = M(M(7, 2), 5) = M((7 × 2), 5) = M(14, 5) = (14 × 5) = 70

13. Correct answer: C
$n(n^2 – 1) = (n-1)(n)(n+1)$ = product of 3 consecutive numbers
middle one is odd, other 2 are even
These 2 even will be of form 4k and 2k, hence these 2 will form a number of form 8k

Also, one out of 3 consecutive numbers will definitely be a multiple of 3
Hence, our number is 8k*3 = 24k

14. Correct Answer: C
AB = 13 cm.
Since the diameter of a circle subtends 90° at the circumference, ∠ACB = 90°.
Hence ΔACB is a right-angled triangle with AC = 5, AB = 13.
So CB should be equal to 12 cm (as 5-12-13 form a Pythagorean triplet).
Hence, the area of the triangle = 1/2 x AC x CB = 1/2 × 5 × 12 = 30 sq. cm.

15. Correct Answer: B
Time is same
Let AB = x
=> 0.6x/3a + 0.4x/2b = 2x/5c
=> 1/a + 1/b = 2/c

16. Correct answer: D
Shortcut :
Since the profit percentage on one is equal to the loss percentage on the other, viz. 10% effectively, it will be a loss given by 102 / 100= 1%.
OR
SP = 600
CP = 300/0.9 + 300/1.1 = 606.0606
So, loss = 1%

17. Correct Answer: B
The minute hand should cross the hour hand once in every 65 + 5/11 min in a correctly running watch.
So they should ideally cross three times once in 3 × 720/11 = 2060/11 min = 196.36 min.
But in the watch under consideration they meet after every 3 hr, 18 min and 15 s, i.e. (3 × 60 + 18 + 15/60) = 793/4 min
= 198.25 min.
In other words, our watch is actually losing time (as it is slower than the normal watch). Hence, when our watch elapsed 198.25 min, it actually should have elapsed 196.36 min.

18. Correct Answer: D
s1 ->
x, y, x/2, z, x + 20
S2 ->
a1, a2, a3, a4
Now, a1 = y – x, a2 = x/2 – y, a3 =z – x/2 and a4 = x + 20 – z
a2 – a1 = 30 gives 3x –4y = 60 ... (i)
a4 – a3 = 30 gives 3x – 4z = 20 ... (ii) and
a4 – a2 = 60 gives x – 2z + 2y = 80 ... (iii)
Solving these equations we get the values of x = 100, y = 60, z = 70
∴S1 = 100, 60, 50, 70, 120
S2 = –40, –10, 20, 50

19. Correct Answer: C
S1 = 100, 60, 50, 70, 120
Avg = 400/5 = 80

20. Correct Answer: B
Check through options.
Orally, option A won't satisfy
B -> 1/100
LHS = -2 - (-1) = -1
RHS = -1
LHS = RHS
Satisfies.

21. Correct answer: B
Any number that gives a remainder of 3 when divided by 7 will be of the form 7k + 3.
Since we only need two-digit numbers, k will range from 1 to 13 {where 7(1) + 3 = 10 and 7(13) + 3 = 94}
Sum of these numbers from k = 1 to 13 with formula 7k + 3 = 13 × 3 + 7(1 + 2 + … + 13) = 39 + 7 x 13 x 14/2 = 39 + 637 = 676

So in a day, when our watch will elapse (60 × 24) = 1440, it should actually elapse 1440 × 196.36 / 198.25 = 1426.27. Hence, the amount of time lost by our watch in one day = (1440 – 1426.27) = 13.73,
i.e. 13 min and 50 s approx

22. Correct answer: 90
Make a diagram as such
iii | iii | iii | iii
The towns are represented by i and the boundaries between 2 towns by |
For each zone, total direct lines between the 3 towns = 3x3 = 9
4 towns => 4 x 9 = 36 lines
For towns belonging to different zones => 9x3 + 6x3 + 3x3 = 54
Total lines = 54 + 36 = 90

23. Correct answer: 7
ax^2 + bx + 1 = 0… (i)
For equation (i) to have real roots, b^2 − 4a ≥ 0 i.e. a ≤ b^2 /4 … (ii)
If b = 4, equation (ii) is satisfied by, a = 1, 2, 3, 4
4 equations are possible.
If b = 3, equation (ii) is satisfied by a = 1, 2
2 equations are possible.
If b = 2, equation (ii) is satisfied by a = 1
1 equation is possible.
If b = 1, equation (ii) is not satisfied.
Thus, total number of possible equations = 7

24. Correct Answer: D

By careful observation of the 3 equations, we see that x=y=1 satisfy all the 3 equations
=> the 3 lines are coincident.

25. Correct Answer: A
Put x^2/3 = y.
Then equation becomes y^2 + y – 2 ≤ 0
=> (y + 2)(y – 1) ≤ 0
=> –2 ≤ y ≤ 1
–2 ≤ x^1/3 ≤ 1
=> –8 ≤ x ≤ 1

26. Correct answer: B
Out of the 5 girls, 3 girls can be invited in 5C3 ways. Nothing is mentioned about the number of boys that he has to invite. He can invite one, two, three, four or even no boys. Out of 4 boys, he can invite them in the said manner in 2^4 ways.
Thus, the total number of ways is 5C3 × 2^4 = 10 × 16 = 160

27. Correct Answer: 4
Won 17 lost 3.
=> 20 = 2/3 of Total
=> Total = 30 matches
Still win more than 3/4th of total matches = more than 22.5
i.e. at least win 23 of them. In other words, the team has to win a minimum of 6 matches (since it has already won 17) out of remaining 10. So it can lose a maximum of 4 of them.

28. Correct Answer: D
Let Ram's 1 day work = 1/a
=> 12(1/a) = 2/5
=> 1/a = 1/30
With Ravi whose 1 day work = 1/b ->
12(1/a + 1/b) = 3/5
=>1/b = 1/20 - 1/30 = 1/60
So, Ram is 100% more efficient than Ravi
Shortcut -> After the first 12 days, in the next 12 days Ram will again do 40% of the work. Hence, Ravi will do 20% of the work.

29. Correct Answer: B
let Japanese's efficiency = 1
Chinese's efficiency = 3
Indian's efficiency = 6
Amount is given in ratio of efficiencies
1 : 3 : 6 ratio
Chinese and Japanese received 4/10 x 10 lakhs = 4 lakhs

30. Correct Answer: A
Using Basic Remainder theorem

10/3 gives a remainder of 1. In fact, any power of 10 when divided by 3 gives a remainder of 1 (i.e. 10/3 remainder =1, 100/3 remainder =1 etc)
Also, Remainder = 1.
Therefore, individual remainders are 1 and 1 and 1-1=0.
Answer is 0

31. Correct Answer: B
57 -> one 50, one 5, one 2 => total = 3
95 -> one 50, one 25, two 10 => total = 4
126 -> one 100, two 10, three 2 => total = 6
27 -> one 25, one 2 => total = 2
TOTAL = 3 + 4 + 6 + 2 = 15

32. Correct Answer: C
If the addition of 10 litres of pure milk makes the concentration twice of what it was before, then the amount added will be the amount of milk present initially.
Replacement of 20 litres, will be the replacement with two 10 litres, making the concentration thrice of what it was initially.
Therefore, the ratio = 1:3

33. Correct answer: B
Let the bus fare = Rs. x and buffet lunch per head = Rs. y
$x + 200y = 165 \times 200$ …(i)
$x + 150y = 170 \times 150$ …(ii)
Then, $x + 100y = 2 \times$ (ii) – (i) = 51000 – 33000 = 18000
Therefore, Cost per head = Rs. 180

34. Correct Answer: B
y^5 X 780 = 3000
y = 1.31
So, 31% increase

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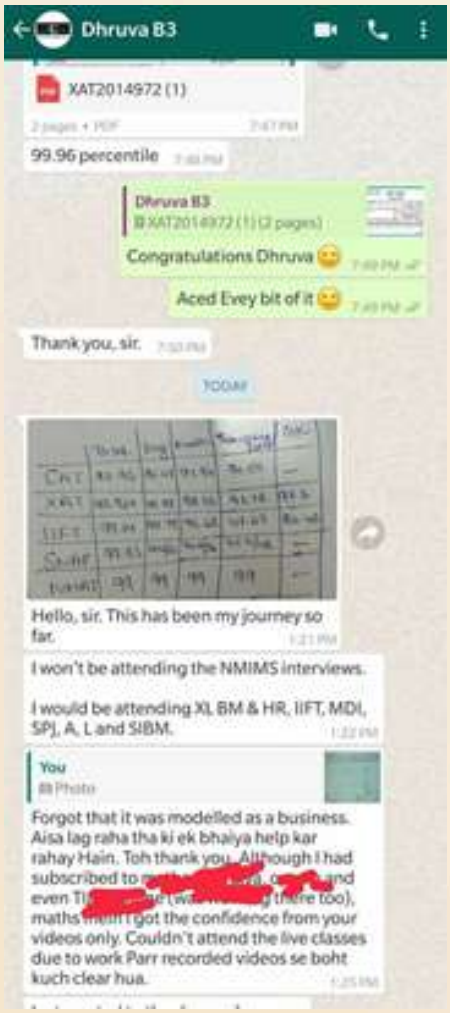

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