# CAT 1999 Question Paper

Common Admission Test · Indian Institutes of Management

**165 Questions**

## General Instructions

(i) This paper contains **165 questions** from **CAT 1999**. The original examination was a **paper-based test**.

(ii) The question groups appear in their original sequence: **Verbal Ability and Reading Comprehension** (55 questions); **Quantitative Ability** (55 questions); **Data Interpretation and Reasoning** (55 questions).

(iii) Each question has **four choices**. Select the single best answer, using the shared passage, table or diagram wherever indicated.

(iv) Read the directions for every question group carefully. Question numbers continue across the paper.

(v) Passages and questions may continue onto the following page. Read each question and all its choices before answering.

## Verbal Ability and Reading Comprehension · Questions 1-55

**1.** A. In rejecting the functionalism in positivist organization theory, either wholly or partially, there is often a move towards a political model of organization theory. B. Thus the analysis would shift to the power resources possessed by different groups in the organization and the way they use these resources in actual power plays to shape the organizational structure. C. At the extreme, in one set of writings, the growth of administrators in the organization is held to be completely unrelated to the work to be done and to be caused totally by the political pursuit of self- interest. D. The political model holds that individual interests are pursued in organizational life through the exercise of power and influence.

(A) ADBC
(B) CBAD
(C) DBCA
(D) ABDC

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**2.** A. Group decision making, however, does not necessarily fully guard against arbitrariness and anarchy, for individual capriciousness can get substituted by collusion of group members. B. Nature itself is an intricate system of checks and balances, meant to preserve the delicate balance between various environmental factors that affect our ecology. C. In institutions also, there is a need to have in place a system of checks and balances which inhibits the concentration of power in only some individuals. D. When human interventions alter this delicate balance, the outcomes have been seen to be disastrous.

(A) CDAB
(B) BCAD
(C) CABD
(D) BDCA

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**3.** A. He was bone-weary and soul-weary, and found himself muttering, "Either I can't manage this place, or it's unmanageable." B. To his horror, he realized that he had become the victim of an amorphous, unwitting, unconscious conspiracy to immerse him in routine work that had no significance. C. It was one of those nights in the office. when -the office clock was moving towards four in the morning and Bennis was still not through with the incredible mass of paper stacked before him. D. He reached for his calendar and ran his eyes down each hour, half-hour, and quarter-hour, to see where his time had gone that day, the day before, the month before.

(A) ABCD
(B) CADB
(C) BDCA
(D) DCBA

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**4.** **The following sentences when arranged in the proper order form a coherent paragraph. Find the correct order.** A. With that, I swallowed the shampoo, and obtained most realistic results almost on the spot. 2. The man shuffled away into the back regions to make up a prescription, and after a moment I got through on the shop-telephone to the Consulate, intimating my location. 3. Then, while the pharmacist was wrapping up a six-ounce bottle of the mixture, I groaned and inquired whether he could give me something for acute gastric cramp. 4. I intended to stage a sharp gastric attack, and entering an old-fashioned pharmacy, I asked for a popular shampoo mixture, consisting of olive oil and flaked soap.

(A) DCBA
(B) DACB
(C) BDAC
(D) BCDA

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**5.** A. Since then, intelligence tests have been mostly used to separate dull children in school from average or bright children, so that special education can be provided to the dull. B. In other words, intelligence tests give us a norm for each age. C. Intelligence is expressed as Intelligence quotient, and tests are developed to indicate what an average child of a certain age can do-what a 5-year-old can answer, but a

4year-old cannot, for instance. D. Binet developed the first set of such tests in the early 1900s to find out which children in school needed special attention. E. Intelligence can be measured by tests.

(A) CDABE
(B) DECAB
(C) EDACB
(D) CBADE

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**6.** Three airlines - IA, JA and SA - operate on the Delhi-Mumbai route. To increase the number of seats sold, SA reduced its fares and this was emulated by IA and JA immediately. The general belief was that the volume of air travel between Delhi and Mumbai would increase as a result. Which of the following, if true, would add credence to the general belief?

(A) Increase in profitability of the three airlines.

(B) Extension of the discount scheme to other routes.

(C) A study that shows that air travellers in India are price-conscious.

(D) A study that shows that as much as 80% of air travel in India is company-sponsored.

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**7.** According to McNeill, a Brahmin priest was expected to be able to recite at least one of the Vedas. The practice was essential for several centuries when the Vedas had not yet been written down. It must have had a selective effect, since priests would have been recruited from those able or willing to memorize long passages. It must have helped in the dissemination of the work, since a memorized passage can be duplicated many times. Which one of the following can be inferred from the above passage?

(A) Reciting the Vedas was a Brahmin's obligation.

(B) The Vedic priest was like a recorded audio cassette.

(C) McNeill studied the behaviour of Brahmin priests.

(D) Vedic hymns had not been scripted.

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**8.** Developed countries have made adequate provisions for social security for senior citizens. State insurers (as well as private ones) offer medicare and pension benefits to people who can no longer earn. In India, with the collapse of the joint family system, the traditional shelter of the elderly has disappeared. And a State faced with a financial crunch is not in a position to provide social security. So, it is advisable that the working population give serious thought to building a financial base for itself. Which one of the following, if it were to happen, weakens the conclusion drawn in the above passage the most?

(A) The investable income of the working population, as a proportion of its total income, will grow in the future.

(B) The insurance sector is underdeveloped and trends indicate that it will be extensively privatized in the future.

(C) India is on a path of development that will take it to a developed country status, with all its positive and negative implications.

(D) If the working population builds a stronger financial base, there will be a revival of the joint family system.

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**9.** Various studies have shown that our forested and hilly regions and, in general, areas where biodiversity—as reflected in the variety of flora—is high, are the places where poverty appears to be high. And these same areas are also the ones where educational performance seems to be poor. Therefore, it may be surmised that, even disregarding poverty status, richness in biodiversity goes hand in hand with educational backwardness. Which one of the following statements, if true, can be said to best provide

supporting evidence for the surmise mentioned in the passage?

(A) In regions where there is little variety in flora, educational performance is seen to be as good as in regions with high variety in flora, when poverty levels are high.

(B) Regions which show high biodiversity also exhibit poor educational performance, at low levels of poverty.

(C) Regions which show high biodiversity reveal high levels of poverty and poor educational performance.

(D) In regions where there is low biodiversity, at all levels of poverty, educational performance is seen to be good.

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**10.** Cigarettes constitute a mere 20% of tobacco consumption in India, and fewer than 15% of the 200 million tobacco users consume cigarettes., Yet these 15% contribute nearly 90% of the tax revenues to the Exchequer from the tobacco sector. The punitive cigarette taxation regime has kept the tax base narrow, and reducing taxes will expand this base. Which one of the following best bolsters the conclusion that reducing duties will expand the tax base'?

(A) The cigarette manufacturers' association has decided to indulge in aggressive promotion.

(B) There is a likelihood that tobacco consumers will shift to cigarette smoking if cigarette prices were to reduce.

(C) The cigarette manufacturers are lobbying for a reduction on duties.

(D) An increase in duties on non-cigarette tobacco may lead to a shift in favour of cigarette smoking.

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**11.** Thomas Malthus, the British clergyman turned economist, predicted that the planet would not be able to support the human population for long. His explanation was that human population grows at a geometric rate, while the food supply grows only at an arithmetic rate. Which one of the following, if true, would not undermine the thesis offered by Malthus?

(A) Population growth can be slowed down by the voluntary choices of individuals and not just by natural disasters.

(B) The capacity of the planet to feed a growing human population can be enhanced through biotechnological means.

(C) Human systems, and natural systems like food supply, follow natural laws of growth which have remained constant, and will remain unchanged.

(D) Human beings can colonize other planetary systems on a regular and on-going basis to accommodate a growing population.

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**12.** The company's coffee crop for 1998-99 totalled 8079 tonnes, an all time record. The increase over the previous year's production of 5830 tonnes was 38.58%. The previous highest crop was 6089 tonnes in 1970-71. The company had fixed a target of 8000 tonnes to be realized by the year 2000-01, and this has been achieved two years earlier, thanks to the emphasis laid on the key areas of irrigation, replacement of unproductive coffee bushes, intensive refilling and improved agricultural practices. It is now our endeavour to reach the target of 10000 tonnes in the year 2001-02. Which one of the following would contribute most to making the target of 10000 tonnes in 2001-02 unrealistic?

(A) The potential of the productivity enhancing measures implemented up to now has been exhausted.

(B) The total company land under coffee has remained constant since 1969 when an estate in the Nilgiri Hills was acquired.

(C) The sensitivity of the crop to climatic factors makes predictions about production uncertain.

(D) The target-setting procedures in the company have been proved to be sound by the achievement of the 8000 tonne target.

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**13.** Animals in general are shrewd in proportion as they cultivate society. Elephants and beavers show the greatest signs of this sagacity when they are together in large numbers, but when man invades their communities they lose all their spirit of industry. Among insects, the labours of the bee and the ant have attracted the attention and admiration of naturalists, but all their sagacity seems to be lost upon separation, and a single bee or ant seems destitute of every degree of industry. It becomes the most stupid insect imaginable, and it languishes and soon dies. Which of the following can be inferred from the above passage?

(A) Humankind is responsible for the destruction of the natural habitat of animals and insects.

(B) Animals, in general, are unable to function effectively outside their normal social environment.

(C) Naturalists have great admiration for bees and ants, despite their lack of industry upon separation.

(D) Elephants and beavers are smarter than bees and ants in the presence of human beings.

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**Questions 14 to 15**

For each of the two questions, indicate which of the statements given, with that particular question is consistent with the description of the unseasonable man in the passage below.

Unseasonableness is a tendency to do socially permissible things at the wrong time. The unseasonable man is the sort of person who comes to confide in you when you are busy. He serenades his beloved when she is ill. He asks a man who has just lost money by paying a bill for a friend to pay a biII for him. He invites a friend to go for a ride just after the friend has finished a long car trip. He is eager to offer services which are not wanted but which cannot be politely refused. If he is present at an arbitration, he stirs up dissension between the two parties, who were really anxious to agree. Such is the unseasonable man.

**14.** He tends to

(A) entertain women.

(B) be a successful arbitrator when dissenting parties are anxious to agree.

(C) be helpful when solicited.

(D) tell a long story to people who have heard it many times before.

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**15.** The unseasonable man tends to

(A) bring a higher bidder to a salesman who has just closed a deal.

(B) disclose confidential information to others.

(C) sing the praises of the bride when he goes to a wedding.

(D) sleep late and rise early.

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**Questions 16 to 23**

In each of the following sentences, a part of the sentence is underlined. Beneath each sentence, four different ways of phrasing the underlined part are indicated. Choose the best alternative from among the four.

**16.** It was us who had left before he arrived.

(A) we who had left before time he had arrived.
(B) us who had went before he arrived.
(C) us who had went before had arrived.
(D) we who had left before he arrived.

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**17.** The MP rose up to say that, in her opinion, she thought the Women's Reservation Bill should be passed on unanimously.

(A) rose to say that she thought the Women's Reservation Bill should be passed
(B) rose up to say that, the Women's Reservation Bill should be passed on
(C) rose to say that, in her opinion, she thought that the Women's Reservation Bill should be passed
(D) rose to say that, in her opinion, the Women's Reservation Bill should be passed on

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**18.** Mr. Pillai, the president of the union and who is also a member of the community group, will be in charge of the negotiations.

(A) since he is a member of the community group
(B) also being a member of the community group
(C) a member of the community group
(D) , in addition, who is a member of the community group

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**19.** Since the advent of cable television, at the beginning of this decade, the entertainment industry took a giant stride forward in our country.

(A) this decade saw the entertainment industry taking
(B) this decade, the entertainment industry has taken
(C) this decade, the entertainment industry had taken
(D) this decade, the entertainment industry took

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**20.** His mother made great sacrifices to educate him, moving house on three occasions, and severing the thread on her loom's shuttle whenever Mencius neglected his lessons to make him understand the need to persevere.

(A) severing the thread on her loom's shuttle whenever Mencius neglected his lessons to make him understand the need to persevere.
(B) severed the thread on her loom's shuttle whenever Mencius neglected his lessons to make him understand the need to persevere.
(C) severed the thread on her loom's shuttle whenever Mencius neglected his lessons to make him understand the need for persevering.
(D) severing the thread on her loom's shuttle whenever Mencius neglected his lessons, to make them understand the need to persevere.

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**21.** If you are on a three-month software design project and, in two weeks, you've put together a programme that solves part of the problem, show it to your boss without delay.

(A) and, you've put together a programme that solves part of the problem in two weeks
(B) and, in two weeks, you've put together a programme that solves part of the problem
(C) and, you've put together a programme that has solved part of the problem in two weeks

(D) and, in two weeks you put together a programme that solved only part of the problem

**22.** Many of these environmentalists proclaim <u>to save nothing less than</u> the planet itself.

(A) to save nothing lesser than
(B) that they are saving nothing lesser than
(C) to save nothing less than
(D) that they save nothing less than

**23.** Bacon believes that the medical profession should be permitted to ease and quicken death where the end would <u>otherwise only delay for a few days and</u> at the cost of great pain.

(A) be delayed for a few days
(B) be delayed for a few days and
(C) be otherwise only delayed for a few days and
(D) otherwise only delay for a few days and

**Questions 24 to 29**

The passage given below is followed by questions. For each question, choose the best answer.

The World Trade Organisation (WTO) was created in the early 1990s as a component of the Uruguay Round negotiation. However, it could have been negotiated as part of the Tokyo Round of the 1970s, since that negotiation was an attempt at a 'constitutional reform' of the General Agreement on Tariffs and Trade (GATT). Or it could have been put off to the future, as the US government wanted. What factors led to the creation of the WTO in the early 1990s?

One factor was the pattern of multilateral bargaining that developed late in the Uruguay Round. Like all complex international agreements, the WTO was a product of a series of trade-offs between principal actors and groups. For the United States, which did not want a new Organisation, the dispute settlement part of the WTO package achieved its longstanding goal of a more effective and more legal dispute settlement system. For the Europeans, who by the 1990s had come to view GATT dispute settlement less in political terms and more as a regime of legal obligations, the WTO package was acceptable as a means to discipline the resort to unilateral measures by the United States. Countries like Canada and other middle and smaller trading partners were attracted by the expansion of a rules-based system and by the symbolic value of a trade Organisation, both of which inherently support the weak against the strong. The developing countries were attracted due to the provisions banning unilateral measures. Finally, and perhaps most important, many countries at the Uruguay Round came to put a higher priority on the export gains than on the import losses that the negotiation would produce, and they came to associate the WTO and a rules-based system with those gains. This reasoning - replicated in many countries - was contained in U.S. Ambassador Kantor's defence of the WTO, and it amounted to a recognition that international trade and its benefits cannot be enjoyed unless trading nations accept the discipline of a negotiated rules-based environment.

A second factor in the creation of the WTO was pressure from lawyers and the legal process. The dispute settlement system of the WTO was seen as a victory of legalists over pragmatists but the matter went deeper than that. The GATT, and the WTO, are contract organisations based on rules, and it is inevitable that an Organisation created to further rules will in turn be influenced by the legal process. Robert Hudec has written of the 'momentum of legal development', but what is this precisely? Legal development can be defined as promotion of the technical legal values of consistency, clarity (or, certainty) and effectiveness; these are values that those responsible for administering any legal system will seek to maximise. As it played out in the WTO, consistency meant integrating under one roof the whole lot of separate agreements signed under GATT auspices; clarity meant removing ambiguities about the powers of contracting parties to make certain decisions or to

undertake waivers; and effectiveness meant eliminating exceptions arising out of grandfather-rights and resolving defects in dispute settlement procedures and institutional provisions. Concern for these values is inherent in any rules-based system of co-operation, since without these values rules would be meaningless in the first place. Rules, therefore, create their own incentive for fulfilment.

The momentum of legal development has occurred in other institutions besides the GATT, most notably in the European Union (EU). Over the past two decades the European Court of Justice (ECJ) has consistently rendered decisions that have expanded incrementally the EU's internal market, in which the doctrine of 'mutual recognition' handed down in the case Cassis de Dijon in 1979 was a key turning point. The Court is now widely recognised as a major player in European integration, even though arguably such a strong role was not originally envisaged in the Treaty of Rome, which initiated the current European Union. One means the Court used to expand integration was the 'teleological method of interpretation', whereby the actions of member states were evaluated against 'the accomplishment of the most elementary community goals set forth in the Preamble to the [Rome] treaty'. The teleological method represents an effort to keep current policies consistent with stated goals, and it is analogous to the effort in GATT to keep contracting party trade practices consistent with stated rules. In both cases legal concerns and procedures are an independent force for further cooperation.

In large part the WTO was an exercise in consolidation. In the context of a trade negotiation that created a near- revolutionary expansion of international trade rules, the formation of the WTO was a deeply conservative act needed to ensure that the benefits of the new rules would not be lost. The WTO was all about institutional structure and dispute settlement: these are the concerns of conservatives and not revolutionaries, which is why lawyers and legalists took the lead on these issues. The WTO codified the GATT institutional practice that had developed by custom over three decades, and it incorporated a new dispute settlement system that was necessary to keep both old and new rules from becoming a sham. Both the international structure and the dispute settlement system were necessary to preserve and enhance the integrity of the multilateral trade regime that had been built incrementally from the 1940s to the 1990s.

**24.** What could be the closest reason why the WTO was not formed in the 1970s?

(A) The US government did not like it.

(B) Important players did not find it in their best interest to do so.

(C) Lawyers did not work for the dispute settlement system.

(D) The Tokyo Round negotiation was an attempt at constitutional reform.

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**25.** The most likely reason for the acceptance of the WTO package by nations was that

(A) it had the means to prevent the US from taking unilateral measures.

(B) they recognized the need for a rule-based environment to protect the benefits of increased trade.

(C) it settles disputes more legally and more effectively.

(D) its rule-based system leads to import gains.

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**26.** According to the passage, WTO promoted the technical legal values partly through

(A) integrating under one roof the agreements signed under GATT.

(B) rules that create their own incentive for fulfilment.

(C) grandfather-rights exceptions and defects in dispute settlement procedures.

(D) ambiguities about the powers of contracting parties to make certain decisions.

**27.** In the method of interpretation of the European Court of Justice,

(A) current policies needed to be consistent with stated goals.

(B) contracting party trade practices needed to be consistent with stated rules.

(C) enunciation of the most elementary community goals needed to be emphasized.

(D) actions of member states needed to be evaluated against the stated community goals.

**28.** In the statement "...it amounted to a recognition that international trade and its benefits cannot be enjoyed unless trading nations accept the discipline of a negotiated rules-based environment.", 'it' refers to:

(A) Ambassador Kantor's defence of the WTO.

(B) The higher priority on export gains placed by many countries at the Uruguay Round.

(C) The export gains many countries came to associate with a rule-based system.

(D) The provision of a rule-based system by the WTO.

**29.** The importance of Cassis de Dijon is that it

(A) gave a new impetus to the momentum of legal development at the European Court of Justice.

(B) resulted in a decision that expanded incrementally the EU's internal market.

(C) strengthened the role of the Court more than envisaged in the Treaty of Rome.

(D) led to a doctrine that was a key turning point in European integration.

**Questions 30 to 34**

Have you ever come across a painting, by Picasso, Mondrian, Miro, or any other modern abstract painter of this century, and found yourself engulfed in a brightly coloured canvas which your senses cannot interpret? Many people would tend to denounce abstractionism as senseless trash. These people are disoriented by Miro's bright, fanciful creatures and two- dimensional canvases. They click their tongues and shake their heads at Mondrian's grid works, declaring the poor guy played too many scrabble games. They silently shake their heads in sympathy for Picasso, whose gruesome, distorted figures must be a reflection of his mental health. Then, standing in front of a work by Charlie Russell, the famous Western artist, they'll declare it a work of God. People feel more comfortable with something they can relate to and understand immediately without too much thought. This is the case with the work of Charlie Russell. Being able to recognize the elements in his paintings - trees, horses and cowboys - gives people a safety line to their world of "reality". There are some who would disagree when I say abstract art requires more creativity and artistic talent to produce a good piece than does representational art, but there are many weaknesses in their arguments.

People who look down on abstract art have several major arguments to support their beliefs. They feel that artists turn abstract because they are not capable of the technical drafting skills that appear in a Russell; therefore, such artists create an art form that anyone is capable of and that is less time consuming, and then parade it as artistic progress. Secondly, they feel that the purpose of art is to create something of beauty in an orderly, logical composition. Russell's compositions are balanced and rational, everything sits calmly on the canvas, leaving the viewer satisfied that he has seen all there is to see. The modern abstractionists, on the other hand, seem to compose their pieces

irrationally. For example, upon seeing Picasso's Guernica, a friend of mine asked me, "What's the point?" Finally, many people feel that art should portray the ideal and real. The exactness of detail in Charlie Russell's work is an example of this. He has been called a great historian because his pieces depict the life style, dress, and events of the times. His subject matter is derived from his own experiences on the trail, and reproduced to the smallest detail.

I agree in part with many of these arguments, and at one time even endorsed them. But now, I believe differently. Firstly, I object to the argument that abstract artists are not capable of drafting. Many abstract artists, such as Picasso, are excellent draftsmen. As his work matured, Picasso became more abstract in order to increase the expressive quality of his work. Guernica was meant as a protest against the bombing of that city by the Germans. To express the terror and suffering of the victims more vividly, he distorted the figures and presented them in a black and white journalistic manner. If he had used representational images and colour, much of the emotional content would have been lost and the piece would not have caused the demand for justice that it did. Secondly, I do not think that a piece must be logical and aesthetically pleasing to be art. The message it conveys to its viewers is more important. It should reflect the ideals and issues of its time and be true to itself, not just a flowery, glossy surface. For example, through his work, Mondrian was trying to present a system of simplicity, logic, and rational order. As a result, his pieces did end up looking like a scrabble board.

Miro created powerful, surrealistic images from his dreams and subconscious. These artists were trying to evoke a response from society through an expressionistic manner. Finally, abstract artists and representational artists maintain different ideas about 'reality'. To the representational artist, reality is what he sees with his eyes. This is the reality he reproduces on canvas. To the abstract artist, reality is what he feels about what his eyes see. This is the reality he interprets on canvas. This can be illustrated by Mondrian's Trees series. You can actually see the progression from the early recognizable, though abstracted, Trees, to his final Explanation, the grid system.

A cycle of abstract and representational art began with the first scratchings of prehistoric man. From the abstractions of ancient Egypt to representational, classical Rome, returning to abstractionism in early Christian art and so on up to the present day, the cycle has been going on. But this day and age may witness its death through the camera. With film, there is no need to produce finely detailed, historical records manually; the camera does this for us more efficiently. Maybe, representational art would cease to exist. With abstractionism as the victor of the first battle, may be a different kind of cycle will be touched off. Possibly, some time in the distant future, thousands of years from now, art itself will be physically non-existent. Some artists today believe that once they have planned and constructed a piece in their mind, there is no sense in finishing it with their hands; it has already been done and can never be duplicated.

**30.** The author argues that many people look down upon abstract art because they feel that:

(A) Modern abstract art does not portray what is ideal and real.

(B) Abstract artists are unskilled in matters of technical drafting.

(C) Abstractionists compose irrationally.

(D) All of the above.

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**31.** The author believes that people feel comfortable with representational art because:

(A) they are not engulfed in brightly coloured canvases.

(B) they do not have to click their tongues and shake their heads in sympathy.

(C) they understand the art without putting too much strain on their minds.

(D) paintings like Guernica do not have a point.

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**32.** In the author's opinion, Picasso's Guernica created a strong demand for justice since

(A) it was a protest against the German bombing of Guernica.

(B) Picasso managed to express the emotional content well with his abstract depiction.

(C) it depicts the terror and suffering of the victims in a distorted way.

(D) it was a mature work of Picasso's, painted when the artist's drafting skills were excellent.

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**33.** The author acknowledges that Mondrian's pieces may have ended up looking like a scrabble board because

(A) many people declared the poor guy played too many scrabble games.

(B) Mondrian believed in the 'grid-works' approach to abstractionist painting.

(C) Mondrian was trying to convey the message of simplicity and rational order.

(D) Mondrian learned from his Trees series to evolve a grid system.

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**34.** The main difference between the abstract artist and the representational artist in matters of the 'ideal' and the 'real', according to the author, is:

(A) How each chooses to deal with 'reality' on his or her canvas.

(B) The superiority of interpretation of reality over reproduction of reality.

(C) The different values attached by each to being a historian.

(D) The varying levels of drafting skills and logical thinking abilities.

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**Questions 35 to 39**

Each one has his reasons: for one art is a flight; for another, a means of conquering. But one can flee into a hermitage, into madness, into death. One can conquer by arms. Why does it have to be writing, why does one have to manage his escapes and conquests by writing? Because, behind the various aims of authors, there is a deeper and more immediate choice which is common to all of us. We shall try to elucidate this choice, and we shall see whether it is not in the name of this very choice of writing that the engagement of writers must be required.

Each of our perceptions is accompanied by the consciousness that human reality is a 'revealer', that is, it is through human reality that 'there is' being, or, to put it differently, that man is the means by which things are manifested. It is our presence in the world which multiplies relations. It is we who set up a relationship between this tree and that bit of sky. Thanks to us, that star which has been dead for millennia, that quarter moon, and that dark river are disclosed in the unity of a landscape. It is the speed of our auto and our airplane which organizes the great masses of the earth. With each of our acts, the world reveals to us a new face. But, if we know that we are directors of being, we also know that we are not its producers. If we turn away from this landscape, it will sink back into its dark permanence. At least, it will sink back; there is no one mad enough to think that it is going to be annihilated. It is we who shall be annihilated, and the earth will remain in its lethargy until another consciousness comes along to awaken it. Thus, to our inner certainty of being 'revealers' is added that of being inessential in relation to the thing revealed. One of the chief motives of artistic creation is certainly the need of feeling that we are essential in relationship to the world. If I fix on

canvas or in writing a certain aspect of the fields or the sea or a look on someone's face which I have disclosed, I am conscious of having produced them by condensing relationships, by introducing order where there was none, by imposing the unity of mind on the diversity of things. That is, I think myself essential in relation to my creation. But this time it is the created object which escapes me; I cannot reveal and produce at the same time. The creation becomes inessential in relation to the creative activity. First of all, even if it appears to others as definitive, the created object always seems to us in a state of suspension; we can always change this line, that shade, that word. Thus, it never forces itself. A novice painter asked his teacher, 'When should I consider my painting finished?' And the teacher answered, 'When you can look at it in amazement and say to yourself "I'm the one who did that!...

Which amounts to saying 'never'. For it is virtually impossible considering one's work with someone else's eyes and revealing what has been created. But it is self-evident that we are proportionally less conscious of the thing produced and more conscious of our productive activity. When it is a matter of poetry or carpentry, we work according to traditional nonns, with tools whose usage is codified; it is Heidegger's famous 'they' who are working with our hands. In this case, the result can seem to us sufficiently strange to preserve its objectivity in our eyes. But if we ourselves produce the rules of production, the measures, the criteria, and if our creative drive comes from the very depths of our heart, then we never find anything but ourselves in our work. It is we who have invented the laws by which we judge it. It is our history, our love, our gaiety that we recognize in it. Even if we should regard it without touching it any further, we never receive from it that gaiety or love. We put them into it. The results which we have obtained on canvas or paper never seem to us objective. We are too familiar with the processes of which they are the effects. These processes remain a subjective discovery; they are ourselves, our inspiration, our ruse, and when we seek to perceive our work, we create it again, we repeat mentally the operations which produced it; each of its aspects appears as a result. Thus, in the perception, the object is given as the essential thing and the subject as the inessential.

The latter seeks essentiality in the creation and obtains it, but then it is the object which becomes the inessential. The dialectic is nowhere more apparent than in the art of writing, for the literary object is a peculiar top which exists only in movement. To make it come into view a concrete act called reading is necessary, and it lasts only as long as this act can last. Beyond that, there are only black marks on paper. Now, the writer can not read what he writes, whereas the shoemaker can put on the shoes he has just made if they are to his size, and the architect can live in the house he has built. In reading, one foresees; one waits. He foresees the end of the sentence, the following sentence, the next page. He waits for them to confirm or disappoint his foresights. The reading is composed of a host of hypotheses, followed by awakenings, of hopes and deceptions, Readers are always ahead of the sentence they are reading in a merely probable future which partly collapses and partly comes together in proportion as they progress, which withdraws from one page to the next and forms the moving horizon of the literary object. Without waiting, without a future, without ignorance, there is no objectivity.

**35.** The author holds that:

(A) There is an objective reality and a subjective reality.

(B) Nature is the sum total of disparate elements.

(C) It is human action that reveals the various facets of nature.

(D) Apparently disconnected elements in nature are unified in a fundamental sense.

**36.** It is the author's contention that:

(A) Artistic creations are results of human consciousness.

(B) The very act of artistic creation leads to the escape of the created object.

(C) Man can produce and reveal at the same time.

(D) An act of creation forces itself on our consciousness leaving us full of amazement.

---

**37.** The passage makes a distinction between perception and creation in terms of

(A) Objectivity and subjectivity.

(B) Revelation and action.

(C) Objective reality and perceived reality.

(D) Essentiality and non-essentiality of objects and subjects.

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**38.** The art of writing manifests the dialectic of perception and creation because

(A) reading reveals the writing till the act of reading lasts.

(B) writing to be meaningful needs the concrete act of reading.

(C) this art is anticipated and progresses on a series of hypotheses.

(D) this literary object has a moving horizon brought about by the very act of creation.

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**39.** A writer, as an artist,

(A) reveals the essentiality of revelation.

(B) makes us feel essential vis-a-vis nature.

(C) creates reality.

(D) reveals nature in its permanence.

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**Questions 40 to 44**

Since World War II, the nation-state has been regarded with approval by every political system and every ideology. In the name of modernisation in the West, of socialism in the Eastern bloc, and of development in the Third World, it was expected to guarantee the happiness of individuals as citizens and of peoples as societies. However, the state today appears to have broken down in many parts of the world. It has failed to guarantee either security or social justice, and has been unable to prevent either international wars or civil wars. Disturbed by the claims of communities within it, the nation-state tries to repress their demands and to proclaim itself as the only guarantor of security of all. In the name of national unity, territorial integrity, equality of all its citizens and non-partisan secularism, the state can use its powerful resources to reject the demands of the communities; it may even go so far as genocide to ensure that order prevails.

As one observes the awakening of communities in different parts of the world, one cannot ignore the context in which identity issues arise. It is no longer a context of sealed frontiers and isolated regions but is one of integrated global systems. In a reaction to this trend towards globalisation, individuals and communities everywhere are voicing their desire to exist, to use their power of creation and to play an active part in national and international life.

There are two ways in which the current upsurge in demands for the recognition of identities can be looked at. On the positive side, the efforts by certain population groups to assert their identity can be regarded as "liberation movements", challenging oppression and injustice. What these groups are doing - proclaiming that they are different, rediscovering the roots of their culture or strengthening group solidarity - may accordingly be seen as legitimate attempts to escape from their state of

subjugation and enjoy a certain measure of dignity. On the downside, however, militant action for recognition tends to make such groups more deeply entrenched in their attitude and to make their cultural compartments even more watertight. The assertion of identity then starts turning into self-absorption and isolation, and is liable to slide into intolerance of others and towards ideas of "ethnic cleansing", xenophobia and violence.

Whereas continuous variations among peoples prevent drawing of clear dividing lines between the groups, those militating for recognition of their group's identity arbitrarily choose a limited number of criteria such as religion, language, skin colour, and place of origin so that their members recognise themselves primarily in terms of the labels attached to the group whose existence is being asserted. This distinction between the group in question and other groups is established by simplifying the feature selected. Simplification also works by transforming groups into essences, abstractions endowed with the capacity to remain unchanged through time. In some cases, people actually act as though the group has remained unchanged and talk, for example, about the history of nations and communities as if these entities survived for centuries without changing, with the same ways of acting and thinking, the same desires, anxieties, and aspirations. Paradoxically, precisely because identity represents a simplifying fiction, creating uniform groups out of disparate people, that identity performs a cognitive function. It enables us to put names to ourselves and others, form some idea of who we are and who others are, and ascertain the place we occupy along with the others in the world and society. The current upsurge to assert the identity of groups can thus be partly explained by the cognitive function performed by identity. However, that said, people would not go along as they do, often in large numbers, with the propositions put to them, in spite of the sacrifices they entail, if there was not a very strong feeling of need for identity, a need to take stock of things and know "who we are", "where we come from", and "where we are going".

Identity is thus a necessity in a constantly changing world, but it can also be a potent source of' violence and disruption. How can these two contradictory aspects of identity be reconciled? First, we must bear the arbitrary nature of identity categories in mind, not with a view to eliminating all forms of identification—which would be unrealistic since identity is a cognitive necessity—but simply to remind ourselves that each of us has several identities at the same time. Second, since tears of nostalgia are being shed over the past, we recognise that culture is constantly being recreated by cobbling together fresh and original elements and counter-cultures. There are in our own country a large number of syncretic cults wherein modern elements are blended with traditional values or people of different communities venerate saints or divinities of particular faiths. Such cults and movements are characterised by a continual inflow and outflow of members which prevent them from taking on a self-perpetuating existence of their own and hold out hope for the future, indeed, perhaps for the only possible future. Finally, the nation-state must respond to the identity urges of its constituent communities and to their legitimate quest for security and social justice. It must do so by inventing what the French philosopher and sociologist, Raymond Aron, called "peace through law". That would guarantee justice both to the state as a whole and its parts, and respect the claims of both reason and emotions. The problem is one of reconciling nationalist demands with the exercise of democracy.

**40.** According to the author, happiness of individuals was expected to be guaranteed in the name of:

(A) Development in the Third world.
(B) Socialism in the Third world.
(C) Development in the West.
(D) Modernisation in the Eastern Bloc.

**41.** Demands for recognition of identities can be viewed:

(A) Positively and negatively.

(B) As liberation movements and militant action.

(C) As efforts to rediscover cultural roots which can slide towards intolerance of others.

(D) All the above

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**42.** Going by the author's exposition of the nature of identity, which of the following statements is untrue?

(A) Identity represents creating uniform groups out of disparate people.

(B) Identity is a necessity in the changing world.

(C) Identity is a cognitive necessity.

(D) None of the above.

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**43.** According to the author, the nation-state

(A) has fulfilled its potential.

(B) is willing to do anything to preserve order.

(C) generates security for all its citizens.

(D) has been a major force in preventing civil and international wars.

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**44.** Which of the following views of the nation-state cannot be attributed to the author?

(A) It has not guaranteed peace and security.

(B) It may go as far as genocide for self-preservation.

(C) It represents the demands of communities within it.

(D) It is unable to prevent international wars.

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**Questions 45 to 50**

The persistent patterns in the way nations fight reflect their cultural and historical traditions and deeply rooted attitudes that collectively make up their strategic culture. These patterns provide insights that go beyond what can be learnt just by comparing armaments and divisions. In the Vietnam War, the strategic tradition of the United States called for forcing the enemy to fight a massed battle in an open area, where superior American weapons would prevail. The United States was trying to re-fight World War II in the jungles of Southeast Asia, against an enemy with no intention of doing so.

Some British military historians describe the Asian way of war as one of indirect attacks, avoiding frontal attacks meant to overpower an opponent. This traces back to Asian history and geography: the great distances and harsh terrain have often made it difficult to execute the sort of open-field clashes allowed by the flat terrain and relatively compact size of Europe. A very different strategic tradition arose in Asia. The bow and arrow were metaphors for an Eastern way of war. By its nature, the arrow is an indirect weapon. Fired from a distance of hundreds of yards, it does not necessitate immediate physical contact with the enemy. Thus, it can be fired from hidden positions. When fired from behind a ridge, the barrage seems to come out of nowhere, taking the enemy by surprise. The tradition of this kind of fighting is captured in the classical strategic writings of the East. The 2,000 years' worth of Chinese writings on war constitutes the most subtle writings on the subject in any

language. Not until Clausewitz, did the West produce a strategic theorist to match the sophistication of Sun-tzu, whose Art of War was written 2,300 years earlier.

In Sun-tzu and other Chinese writings, the highest achievement of arms is to defeat an adversary without fighting. He wrote: "To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the supreme excellence." Actual combat is just one among many means towards the goal of subduing an adversary. War contains too many surprises to be a first resort. It can lead to ruinous losses, as has been seen time and again. It can have the unwanted effect of inspiring heroic efforts in an enemy, as the United States learned in Vietnam, and as the Japanese found out after Pearl Harbor. Aware of the uncertainties of a military campaign, Sun-tzu advocated war only after the most thorough preparations. Even then it should be quick and clean. Ideally, the army is just an instrument to deal the final blow to an enemy already weakened by isolation, poor morale, and disunity. Ever since Sun-tzu, the Chinese have been seen as masters of subtlety who take measured actions to manipulate an adversary without his knowledge. The dividing line between war and peace can be obscure. Low-level violence often is the backdrop to a larger strategic campaign. The unwitting victim, focused on the day-to-day events, never realizes what's happening to him until it's too late. History holds many examples. The Viet Cong lured French and U.S. infantry deep into the jungle, weakening their morale over several years. The mobile army of the United States was designed to fight on the plains of Europe, where it could quickly move unhindered from one spot to the next. The jungle did more than make quick movement impossible; broken down into smaller units and scattered in isolated bases, US forces were deprived of the feeling of support and protection that ordinarily comes from being part of a big army. The isolation of U.S. troops in Vietnam was not just a logistical detail, something that could be overcome by, for instance, bringing in reinforcements by helicopter. In a big army reinforcements are readily available. It was Napoleon who realized the extraordinary effects on morale that come from being part of a larger formation. Just the knowledge of it lowers the soldier's fear and increases his aggressiveness. In the jungle and on isolated bases, this feeling was removed. The thick vegetation slowed down the reinforcements and made it difficult to find stranded units. Soldiers felt they were on their own.

More important, by altering the way the war was fought, the Viet Cong stripped the United States of its belief in the inevitability of victory, as it had done to the French before them. Morale was high when these armies first went to Vietnam. Only after many years of debilitating and demoralizing fighting did Hanoi launch its decisive attacks, at Dienbienphu in 1954 and against Saigon in 1975. It should be recalled that in the final push to victory the North Vietnamese abandoned their jungle guerrilla tactics completely, committing their entire army of twenty divisions to pushing the South Vietnamese into collapse. This final battle, with the enemy's army all in one place, was the one that the United States had desperately wanted to fight in 1965. When it did come out into the open in 1975, Washington had already withdrawn its forces and there was no possibility of re-intervention. The Japanese early in World War II used a modern form of the indirect attack, one that relied on stealth and surprise for its effect. At Pearl Harbor, in the Philippines, and in Southeast Asia, stealth and surprise were attained by sailing under radio silence so that the navy's movements could not be tracked. Moving troops aboard ships into Southeast Asia made it appear that the Japanese army was also "invisible." Attacks against Hawaii and Singapore seemed, to the American and British defenders, to come from nowhere. In Indonesia and the Philippines the Japanese attack was even faster than the German blitz against France in the West.

The greatest military surprises in American history have all been in Asia. Surely there is something going on here beyond the purely technical difficulties of detecting enemy movements. Pearl Harbor, the Chinese intervention in Korea, and the Tet offensive in Vietnam all came out of a tradition of surprise and stealth. U.S. technical intelligence – the location of enemy units and their movements was

greatly improved after each surprise, but with no noticeable improvement in the American ability to foresee or prepare what would happen next. There is a cultural divide here, not just a technical one. Even when it was possible to track an army with intelligence satellites, as when Iraq invaded Kuwait or when Syria and Egypt attacked Israel, surprise was achieved. The United States was stunned by Iraq's attack on Kuwait even though it had satellite pictures of Iraqi troops massing at the border. The exception that proves the point that cultural differences obscure the West's understanding of Asian behavior was the Soviet Union's 1979 invasion of Afghanistan. This was fully anticipated and understood in advance. There was no surprise because the United States understood Moscow's worldview and thinking. It could anticipate Soviet action almost as well as the Soviets themselves, because the Soviet Union was really a Western country.

The difference between the Eastern and the Western way of war is striking. The West's great strategic writer, Clausewitz, linked war to politics, as did Sun-tzu. Both were opponents of militarism, of turning war over to the generals. But there all similarity ends. Clausewitz wrote that the way to achieve a larger political purpose is through destruction of the enemy's army. After observing Napoleon conquer Europe by smashing enemy armies to bits, Clausewitz made his famous remark in On War (1932) that combat is the continuation of politics by violent means. Morale and unity are important, but they should be harnessed for the ultimate battle. If the Eastern way of war is embodied by the stealthy archer, the metaphorical Western counterpart is the swordsman charging forward, seeking a decisive showdown, eager to administer the blow that will obliterate the enemy once and for all. In this view, war proceeds along a fixed course and occupies a finite extent of time, like a play in three acts with a beginning, a middle, and an end. The end, the final scene, decides the issue for good.

When things don't work out quite this way, the Western military mind feels tremendous frustration. Sun-tzu's great disciples, Mao Zedong and Ho Chi Minh, are respected in Asia for their clever use of indirection and deception to achieve an advantage over stronger adversaries. But in the West their approach is seen as underhanded and devious. To the American strategic mind, the Viet Cong guerrilla did not fight fairly. He should have come out into the open and fought like a man, instead of hiding in the jungle and sneaking around like a cat in the night.

**45.** According to the author, the main reason for the U.S. losing the Vietnam war was

(A) the Vietnamese understood the local terrain better.

(B) the lack of support for the war from the American people.

(C) the failure of the U.S. to mobilize its military strength.

(D) their inability to fight a war on terms other than those they understood well.

---

**46.** Which of the following statements does not describe the 'Asian' way of war?

(A) Indirect attacks without frontal attacks.

(B) The swordsman charging forward to obliterate the enemy once and for all.

(C) Manipulation of an adversary without his knowledge.

(D) Subduing an enemy without fighting.

---

**47.** Which of the following is not one of Sun-tzu's ideas?

(A) Actual combat is the principal means of subduing an adversary.

(B) War should be undertaken only after thorough preparation.

(C) War is linked to politics.

(D) War should not be left to the generals alone.

---

**48.** The difference in the concepts of war of Clausewitz and Sun-tzu is best characterized by

(A) Clausewitz's support for militarism as against Sun-tzu's opposition to it.

(B) their relative degrees of sophistication.

(C) their attitude to guerrilla warfare.

(D) their differing conceptions of the structure, time and sequence of a war.

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**49.** To the Americans, the approach of the Viet Cong seemed devious because

(A) the Viet Cong did not fight like men out in the open.

(B) the Viet Cong allied with America's enemies.

(C) the Viet Cong took strategic advice from Mao Zedong.

(D) the Viet Cong used bows and arrows rather than conventional weapons.

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**50.** According to the author, the greatest military surprises in American history have been in Asia because

(A) The Americans failed to implement their military strategies many miles away from their own country.

(B) The Americans were unable to use their technologies like intelligence satellites effectively to detect enemy movements.

(C) The Americans failed to understand the Asian culture of war that was based on stealth and surprise.

(D) Clausewitz is inferior to Sun-tzu.

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**51.** 1. Making people laugh is tricky. A. At times, the intended humour may simply not come off. B. Making people laugh while trying to sell them something is a tougher challenge, since the commercial can fall flat on two grounds. C. There are many advertisements which do amuse but do not even begin to set the cash tills ringing. D. Again, it is rarely sufficient for an advertiser simply to amuse the target audience in order to reap the sales benefit. 6. There are indications that in substituting the hard sell for a more entertaining approach, some agencies have rather thrown out the baby with the bath water.

(A) CDBA

(B) ABCD

(C) BADC

(D) DCBA

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**52.** 1. Picture a termite colony, occupying a tall mud hump on an African plain. A. Hungry predators often invade the colony and unsettle the balance. B. The colony flourishes only if the proportion of soldiers to workers remains roughly the same, so that the queen and workers can be protected by the soldiers, and the queen and soldiers can be serviced by the workers. C. But its fortunes are presently restored, because the immobile queen, walled in well below ground level, lays eggs not only in large enough numbers, but also in the varying proportions required. D. The hump is alive with worker termites and soldier termites going about their distinct kinds of business. 6. How can we account for her mysterious ability to respond like this to events on the distant surface? 6. How can we account for a mysterious ability to

respond like this to events on the distant surface?

(A) BADC (B) DBAC

(C) ADCB (D) BDCA

---

**53.** 1. According to recent research, the critical period for developing language skills is between the age of three and five years. A. The read-to child already has a large vocabulary and a sense of grammar and sentence structure. B. Children who are read to in these years have a far better chance of reading well in school, indeed, of doing well in all their subjects. C. And the reason is actually quite simple. D. This correlation is far and away the highest yet found between home influences and school success. 6. Their comprehension of language is therefore very high.

(A) DACD (B) ADCB

(C) ABCD (D) BDCA

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**54.** 1. High-powered outboard motors were considered to be one of the major threats to the survival of the Beluga whales. A. With these, hunters could approach Belugas within hunting range and profit from its inner skin and blubber. B. To escape an approaching motor, Belugas have learned to dive to the ocean bottom and stay there for up to 20 minutes, by which time the confused predator has left. C. Today, however, even with much more powerful engines, it is difficult to come close, because the whales seem to disappear suddenly just when you thought you had them in your sights. D. When the first outboard engines arrived in the early 1930s, one came across 4 and 8 HP motors. 6. Belugas seem to have used their well-known sensitivity to noise to evolve an ‘avoidance' strategy to outsmart hunters and their powerful technologies.

(A) DACB (B) CDAB

(C) ADBC (D) BDAC

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**55.** 1. The reconstruction of history by post-revolutionary science texts involves more than a multiplication of historical misconstructions. A. Because they aim quickly to acquaint the student with what the contemporary scientific community thinks it knows, textbooks treat the various experiments, concepts, laws and theories of the current normal science as separately and as nearly seriatim as possible. B. Those misconstructions render revolutions invisible; the arrangement of the still visible material in science texts implies a process that, if it existed, would deny revolutions a function. C. But when combined with the generally unhistorical air of science writing and with the occasional systematic misconstruction, one impression is likely to follow. D. As pedagogy this technique of presentation is unexceptionable. 6. Science has reached its present state by a series of individual discoveries and inventions that, when gathered together, constitute the modem body of technical knowledge.

(A) BADC (B) ADCB

(C) DACB (D) CBDA

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**56.** The number of positive integer valued pairs (x, y), satisfying 4x - 17 y = 1 and x < 1000 is:

(A) 59
(B) 57
(C) 55
(D) 58

---

**57.** Let a, b, c be distinct digits. Consider a two digit number $'ab'$ and a three digit number $'ccb'$, both defined under the usual decimal number system. If $((ab)^2 = ccb)$ and $ccb > 300$ then the value of b is

(A) 1
(B) 0
(C) 5
(D) 6

---

**58.** The remainder when $7^{84}$ is divided by 342 is :

(A) 0
(B) 1
(C) 49
(D) 341

---

**59.** Ten points are marked on a straight line and eleven points are marked on another straight line. How many triangles can be constructed with vertices from among the above points?

(A) 495
(B) 550
(C) 1045
(D) 2475

---

**60.** For a scholarship, at most n candidates out of 2n + 1 can be selected. If the number of different ways of selection of at least one candidate is 63, the maximum number of candidates that can be selected for the scholarship is:

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

---

**61.** The speed of a railway engine is 42 Km per hour when no compartment is attached, and the reduction in speed is directly proportional to the square root of the number of compartments attached. If the speed of the train carried by this engine is 24 Km per hour when 9 compartments are attached, the maximum number of compartments that can be carried by the engine is:

(A) 49
(B) 48
(C) 46
(D) 47

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**62.** Total expenses of a boarding house are partly fixed and partly varying linearly with the number of boarders. The average expense per boarder is Rs. 700 when there are 25 boarders and Rs. 600 when there are 50 boarders. What is the average expense per boarder when there are 100 boarders?

(A) 550
(B) 580
(C) 540
(D) 560

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**63.** Forty percent of the employees of a certain company are men, and 75 percent of the men earn more than Rs. 25,000 per year. If 45 percent of the company's employees earn more than Rs. 25,000 per year, what fraction of the women employed

by the company earn Rs. 25,000 year or less'?

(A) 2/11
(B) 1/4
(C) 1/3
(D) 3/4

**64.** If | r - 6 | = 11 and | 2q - 12 | = 8, what is the minimum possible value of q / r?

(A) -2/5
(B) 2/17
(C) 10/17
(D) None of these

**65.** If n = 1 + x, where x is the product of four consecutive positive integers, then which of the following is/are true? A. n is odd B. n is prime C. n is a perfect square

(A) A and C only
(B) A and B only
(C) A only
(D) None of these

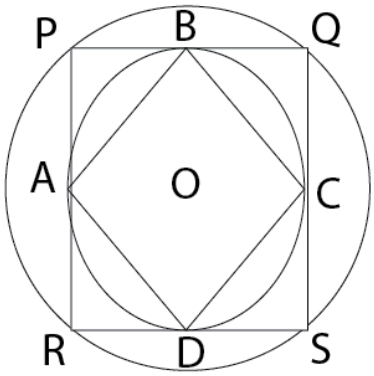
**66.** In a survey of political preference, 78% of those asked were in favor of at least one of the proposals: I, II and III. 50% of those asked favored proposal I, 30% favored proposal II, and 20% favored proposal III. If 5% of those asked favored all three of the proposals, what percentage of those asked favored more than one of the 3 proposals.

(A) 10
(B) 12
(C) 17
(D) 22

**67.** For two positive integers a and b define the function h(a,b):as the greatest common factor (G.C.F) of a, b. Let A be a set of n positive integers. G(A), the GCF of the elements of set A is computed by repeatedly using the function h. The minimum number of times h is required to be used to compute G is:

(A) 1/2 n
(B) (n - 1)
(C) n
(D) None of these

**68.** The figure below shows two concentric circles with centre 0. PQRS is a square, inscribed in the outer circle. It also circumscribes the inner circle, touching it at points B, C, D and A. What is the ratio of the perimeter of the outer circle to that of polygon ABCD?




(A) $\frac{\pi}{4}$

(B) $\frac{3\pi}{2}$

(C) $\frac{\pi}{2}$

(D) $\pi$

---

**69.** Three labeled boxes containing red and white cricket balls are all mislabeled. It is known that one of the boxes contains only white balls and one only red balls. The third contains a mixture of red and white balls. You are required to correctly label the boxes with the labels red, white and red and white by picking a sample of one ball from only one box. What is the label on the box you should sample?

(A) White

(B) Red

(C) Red and White

(D) Not possible to determine from a sample of one ball

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**70.** If $n^2 = 123456787654321$, what is $n$?

(A) 12344321

(B) 1235789

(C) 11111111

(D) 1111111

---

**71.** Abraham, Border, Charlie, Dennis and Elmer and their respective wives recently dined together and were seated at a circular table. The seats were so arranged that men and women alternated and each woman was three places distant from her husband. Mrs. Charlie sat to the immediate left of Mr. Abraham. Mrs. Elmer sat two places to the right of Mrs. Border. Who sat to the right of Mr. Abraham?

(A) Mrs. Dennis

(B) Mrs. Elmer

(C) Mrs. Border

(D) Mrs. Border or Mrs. Dennis

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**72.** Navjivan Express from Ahmedabad to Chennai leaves Ahmedabad at 6:30 am and travels at 50km per hour towards Baroda situated 100 kms away. At 7:00 am Howrah - Ahmedabad express leaves Baroda towards Ahmedabad and travels at 40 km per hour. At 7:30 Mr. Shah, the traffic controller at Baroda realises that both the trains are running on the same track. How much time does he have to

avert a head-on collision between the two trains?

(A) 15 minutes
(B) 20 minutes
(C) 25 minutes
(D) 30 minutes

**73.** There is a circle of radius 1 cm. Each member of a sequence of regular polygons S1(n), n = 4,5,6,... , where n is the number of sides of the polygon, is circumscribing the circle; and each member of the sequence of regular polygons S2(n), n = 4,5,6.... where n is the number of sides of the polygon, is inscribed in the circle. Let L1(n) and L2(n) denote the perimeters of the corresponding polygons of S1(n) and S2(n). Then $\frac{L1(13)+2\pi}{L2(17)}$ is

(A) greater than $\frac{\pi}{4}$ and less than 1
(B) greater than 1 and less than 2
(C) greater than 2
(D) less than $\frac{\pi}{4}$

**74.** There is a square field with each side 500 metres long. It has a compound wall along its perimeter. At one of its comers, a triangular area of the field is to be cordoned off by erecting a straight line fence. The compound wall and the fence will form its borders. If the length of the fence is 100 metres, what is the maximum area in square metres that can be cordoned off?

(A) 2,500
(B) 10,000
(C) 5,000
(D) 20,000

**Questions 75 to 77**

DIRECTIONS for the following three questions: These questions are based on the situation given below: Ten coins are distributed among four people P, Q, R, S such that one of them gets one coin, another gets two coins, the third gets three coins and the fourth gets four coins. It is known that Q gets more coins than P, and S gets fewer coins than R.

**75.** If the number of coins distributed to Q is twice the number distributed to P then which one of the following is necessarily true?

(A) R gets an even number of coins.
(B) R gets an odd number of coins.
(C) S gets an even number of coins.
(D) S gets an odd number of coins.

**76.** If R gets at least two more coins than S, then which one of the following is necessarily true?

(A) Q gets at least two more coins than S.
(B) Q gets more coins than P.
(C) P gets more coins than S.
(D) P and Q together get at least five coins.

**77.** If Q gets fewer coins than R, then which one of the following is not necessarily true?

(A) P and Q together get at least four coins.
(B) Q and S together get at least four coins.
(C) R and S together get at least five coins.
(D) P and R together get at least five coins.

**Questions 78 to 80**

DIRECTIONS for the following questions: These questions are based on the situation given below: A young girl Roopa leaves home with x flowers, goes to the bank of a nearby river. On the bank of the river, there are four places of worship, standing in a row. She dips all the x flowers into the river. The

number of flowers doubles. Then she enters the first place of worship, offers y flowers to the deity. She dips the remaining flowers into the river, and again the number of flowers doubles. She goes to the second place of worship, offers y flowers to the deity. She dips the remaining flowers into the river, and again the number of flowers doubles. She goes to the third place of worship, offers y flowers to the deity. She dips the remaining flowers into the river, and again the number of flowers doubles. She goes to the fourth place of worship, offers y flowers to the deity. Now she is left with no flowers in hand.

**78.** If Roopa leaves home with 30 flowers, the number of flowers she offers to each deity is:

(A) 30
(B) 31
(C) 32
(D) 33

**79.** The minimum number of flowers that could be offered to each deity is:

(A) 0
(B) 15
(C) 16
(D) Cannot be determined

**80.** The minimum number of flowers with which Roopa leaves home is:

(A) 16
(B) 15
(C) 0
(D) Cannot be determined

**Questions 81 to 82**

DIRECTIONS for the following two questions: The following table presents the sweetness of different items relative to sucrose, whose sweetness is taken to be 1.00.

| | |
|---|---|
| Lactose | 0.16 |
| Maltose | 0.32 |
| Glucose | 0.74 |
| Sucrose | 1 |
| Fructose | 1.7 |
| Saccharin | 675 |

**81.** What is the maximum amount of sucrose (to the nearest gram) that can be added to one-gram of saccharin such that the final mixture obtained is atleast 100 times as sweet as glucose?

(A) 7
(B) 8
(C) 9
(D) 100

**82.** Approximately how many times sweeter than sucrose is a mixture consisting of glucose, sucrose and fructose in the ratio of 1: 2: 3?

(A) 1.3
(B) 1
(C) 0.6
(D) 2.3

**Questions 83 to 84**

Answer the questions on the basis of the information given below.

These questions are based on the situation given below: A, B, C, D, E and F are a group of friends from a club. There are two housewives, one lecturer, one architect, one accountant and one lawyer in the group. There are two married couples in the group. The lawyer is married to D who is a housewife. No lady in the group is either an architect or an accountant. C, the accountant, is married to F who is a lecturer. A is married to D and E is not a housewife.

**83.** What is E?

(A) Lawyer
(B) Architect
(C) Lecturer
(D) Accountant

**84.** How many members of the group are male?

(A) 2
(B) 3
(C) 4
(D) None of these

**Questions 85 to 86**

DIRECTIONS for the following two questions: These questions are based on the situation given below: Seven university cricket players are to be honored at a special luncheon. The players will be seated on the dais along one side of a single rectangular table. A and G have to leave the luncheon early and must be seated at the extreme right end of the table, which is closest to the exit. B will receive the Man of the Match award and must be in the center chair. C and D who are bitter rivals for the position of wicket keeper, dislike one another and should be seated as far apart as possible. E and F are best friends and want to sit together.

**85.** Which of the following may not be seated at either end of the table?

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

**86.** Which of the following pairs may not be seated together?

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

**Questions 87 to 88**

DIRECTIONS for the following two questions: These questions are based on the situation given below:

A rectangle PRSU, is divided into two smaller rectangles PQTU, and QRST by the line TQ. PQ=10cm, QR = 5 cm and RS = 10 cm. Points A, B, F are within rectangle PQTU, and points C, D,

E are within the rectangle QRST. The closest pair of points among the pairs (A, C), (A, D), (A, E), (F, C), (F, D), (F, E), (B, C), (B, D), (B, E) are $10\sqrt{3}$ cm apart.

**87.** Which of the following statements is necessarily true?

(A) The closest pair of points among the six given points cannot be (F, C)

(B) Distance between A and B is greater than that between F and C

(C) The closest pair of points among the six given points is (C, D), (D, E), or (C, E)

(D) None of the above

---

**88.** AB > AF > BF; CD > DE > CE; and BF = $6\sqrt{5}$ cm. Which is the closest pair of points among all the six given points?

(A) B, F

(B) C, D

(C) A, B

(D) None of these

---

**Questions 89 to 92**

DIRECTIONS for the following questions: These questions are based on the situation given below: In each of the questions a pair of graphs F(x) and F1(x) is given. These are composed of straight-line segments, shown as solid lines, in the domain $x\epsilon(-2, 2)$.

choose the answer as

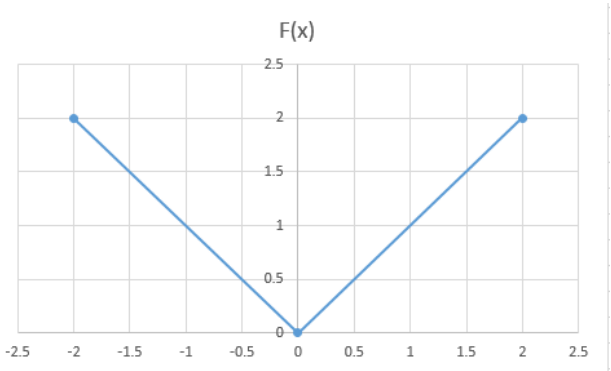
a. If F1(x) = - F(x)

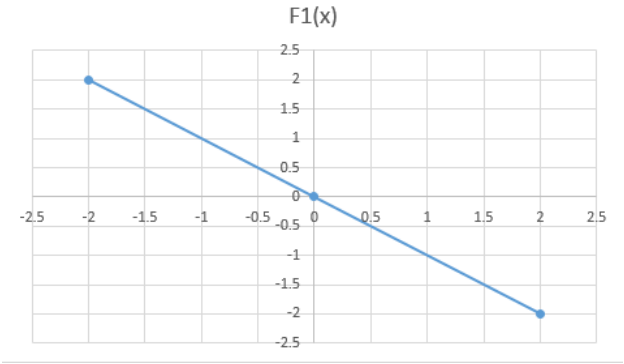
b. if F1(x) = F(- x)

c. if F1(x) = - F(- x)

d. if none of the above is true

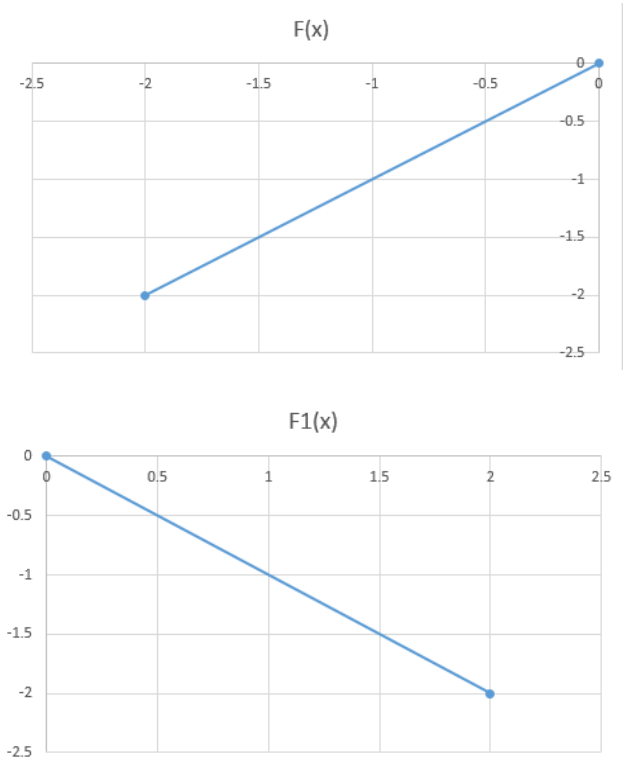
**89.**





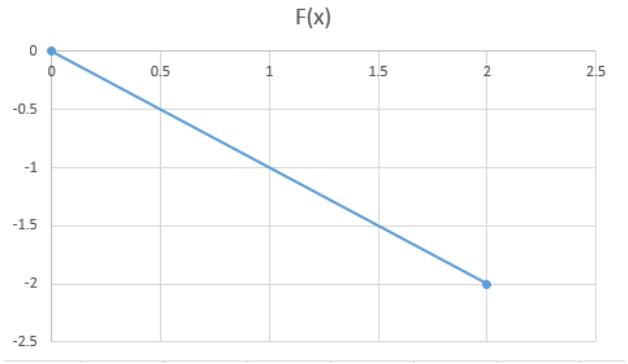

(A) a
(B) b
(C) c
(D) d

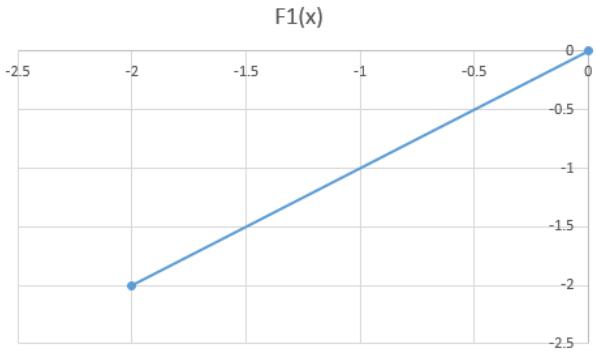
**90.**




(A) a
(B) b
(C) c
(D) d

**91.**



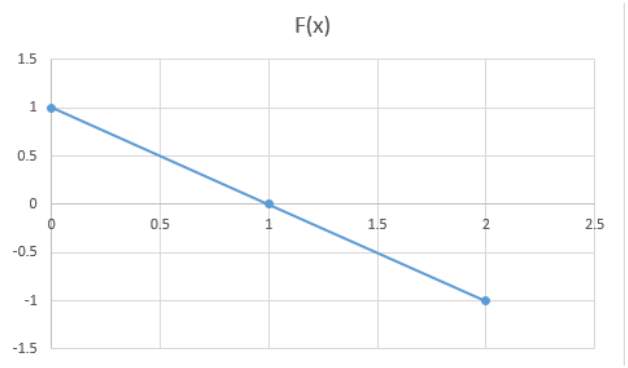

(A) a

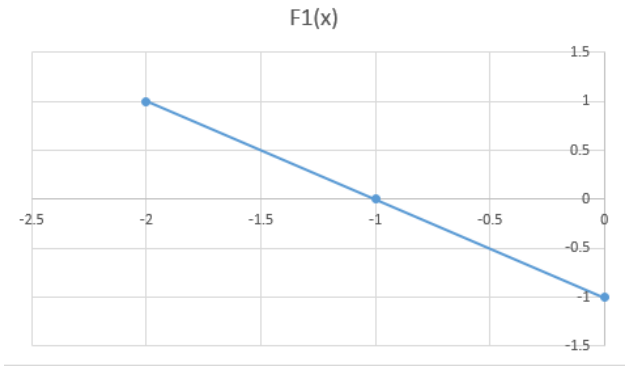
(B) b

(C) c

(D) d

**92.**






(A) a

(B) b

(C) c

(D) d

**Questions 93 to 94**

DIRECTIONS for the following questions: These questions are based on the situation given below:

There are m blue vessels with known volumes $V1, V2, ...., V_m$, arranged in ascending order of volume, where $v_1 > 0.5$ litre, and $V_m < 1$ litre. Each of these is full of water initially. The water from each of these is emptied into a minimum number of empty white vessels, each having volume 1 litre. The water from a blue vessel is not emptied into a white vessel unless the white vessel has enough empty volume to hold all the water of the blue vessel. The number of white vessels required to empty all the blue vessels according to the above rules was n.

**93.** Among the four values given below, which is the least upper bound on e, where e is the total empty volume in the m white vessels at the end of the above process?

(A) $mv_m$

(B) $m(1 - v_m)$

(C) $mv_1$

(D) $m(1 - v_1)$

**94.** Let the number of white vessels needed be n1 for the emptying process described above, if the volume of each white vessel is 2 liters. Among the following values, which is the least upper bound on n1?

(A) m/4

(B) smallest integer greater than or equal to (m/2)

(C) n

(D) greatest integer less than or equal to (m/2)

**Questions 95 to 97**

DIRECTIONS for the following questions: These questions are based on the situation given below: There are fifty integers $a_1, a_2, ..., a_{50}$, not all of them necessarily different. Let the greatest integer of these fifty integers be referred to as $G$, and the smallest integer be referred to as $L$. The integers $a_1$ through $a_{24}$ form sequence $S1$, and the rest form sequence $S2$. Each member of $S1$ is less than or equal to each member of $S2$.

**95.** All values in S1 are changed in sign, while those in S2 remain unchanged. Which of the following statements is true?

(A) Every member of S1 is greater than or equal to every member of S2.

(B) G is in S1

(C) If all numbers originally in S1 and S2 had the same sign, then after the change of sign, the largest number of S1 and S2 is in S1.

(D) None of the above

---

**96.** Elements of $S1$ are in ascending order, and those of $S2$ are in descending order. $a_{24}$ and $a_{25}$ are interchanged. Then, which of the following statements is true?

(A) S1 continues to be in ascending order

(B) S2 continues to be in descending order

(C) S1 continues to be in ascending order and S2 in descending order.

(D) None of the above

---

**97.** Every element of S1 is made greater than or equal to every element of S2 by adding to each element of S1 an integer x. Then x cannot be less than:

(A) $2^{10}$

(B) The smallest value of $S2$

(C) The largest value of $S2$

(D) ( G-L )

---

**Questions 98 to 100**

DIRECTIONS for the following questions: These questions are based on the situation given below: Let x and y be real numbers

f(x, y) = | x + y |

F(f(x, y)) = -f(x, y)

G(f(x, y)) = -F(f(x, y))

**98.** Which of the following statements is true?

(A) F(f(x, y)) . G(f(x, y)) = -F(f(x, y)) . G(f(x, y))

(B) F(f(x, y)) . G(f(x, y)) > -F(f(x, y)) . G(f(x, y))

(C) F(f(x, y)) . G(f(x, y)) $\neq$ G(f(x, y)) . F(f(.x, y))

(D) F(f(x,y)) + G(f(x, y)) + f(x, y) = f(-x, -y)

---

**99.** What is the value of f(G(f(1, 0)), f(F(f(1, 2)), G(f(1, 2))))?

(A) 3

(B) 2

(C) 1

(D) 0

---

**100.** Which of the following expressions yields $x^2$ as its result?

(A) F(f(x, -x)).G(f(x, -x))

(B) F(f(x, x)).G(f(x, x)).4

(C) -F(f(x, x).G(f(x, x)) / $\log_2 16$

(D) f(x, x).f(x, x)

## Questions 101 to 102

DIRECTIONS for the following questions:

These questions are based on the situation given below: A robot moves on a graph sheet with x and y-axes. The robot is moved by feeding it with a sequence of instructions. The different instructions that can be used in moving it, and their meanings are: Instruction Meaning GOTO(x,y) move to point with coordinates (x, y) no matter where you are currently WALKX(P) Move parallel to the x-axis through a distance of p, in the positive direction if p is positive, and in the negative direction if p is negative WALKY(P) Move parallel to the y-axis through a distance of p, in the positive direction if p is positive, and in the negative direction if p is negative.

**101.** The robot reaches point (6, 6) when a sequence of three instructions is executed, the first of which is a GOTO(x, y) instruction, the second is WALKX(2) and the third is WALKY(4). What are the values of x and y?

(A) 2, 4
(B) 0, 0
(C) 4, 2
(D) 2, 2

**102.** The robot is initially at (x, y), $x > 0$ and $y < 0$. The minimum number of instructions needed to be executed to bring it to the origin (0,0) if you are prohibited from using the GOTO instruction is:

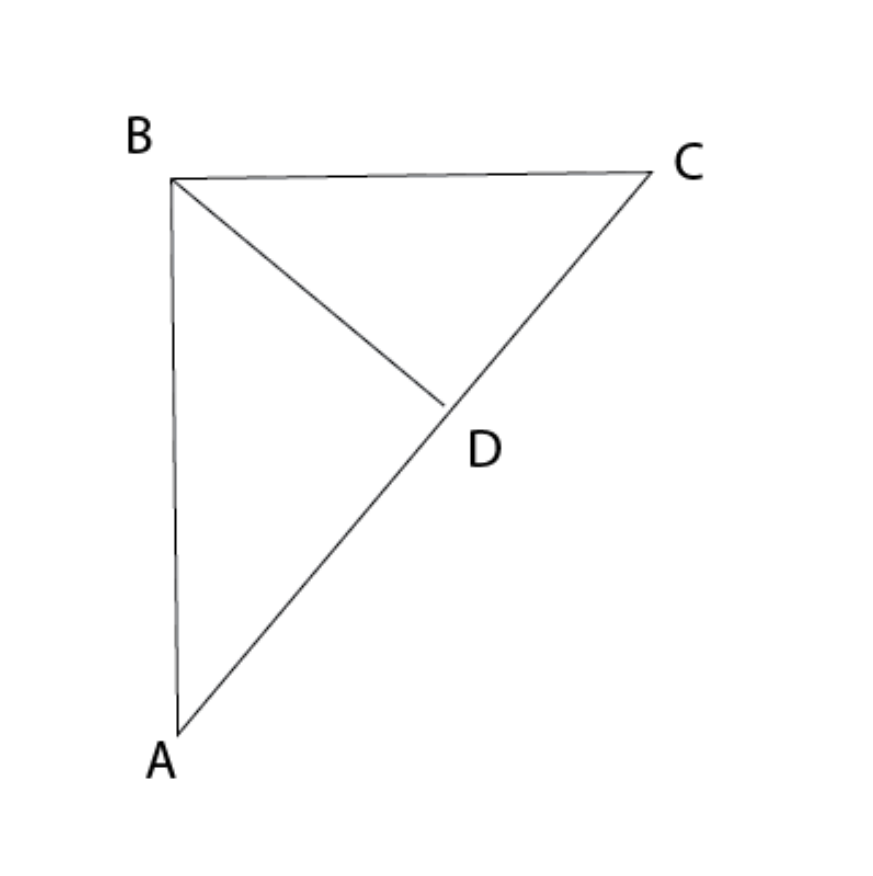
(A) 2
(B) 1
(C) x + y
(D) 0

## Questions 103 to 105

DIRECTIONS for the following three questions

These questions are based on the situation given below:

A road network (shown in the figure below) connects cities A, B, C and D. All road segments are straight lines. D is the midpoint on the road connecting A and C. Roads AB and BC are at right angles to each other with BC shorter than AB. The segment AB is 100 km long. Ms. X and Mr. Y leave A at 8:00 am, take different routes to city C and reach at the same time. X takes the highway from A to B to C and travels at an average speed of 61.875 km per hour. Y takes the direct route AC and travels at 45 km per hour on segment AD. Y's speed on segment DC is 55 km per hour.




**103.** What is the average speed of Y in km per hour?

(A) 47.5
(B) 49.5
(C) 50
(D) 52

**104.** The total distance traveled by Y during the journey is approximately

(A) 105 km
(B) 150 km
(C) 130 km
(D) Cannot be determined

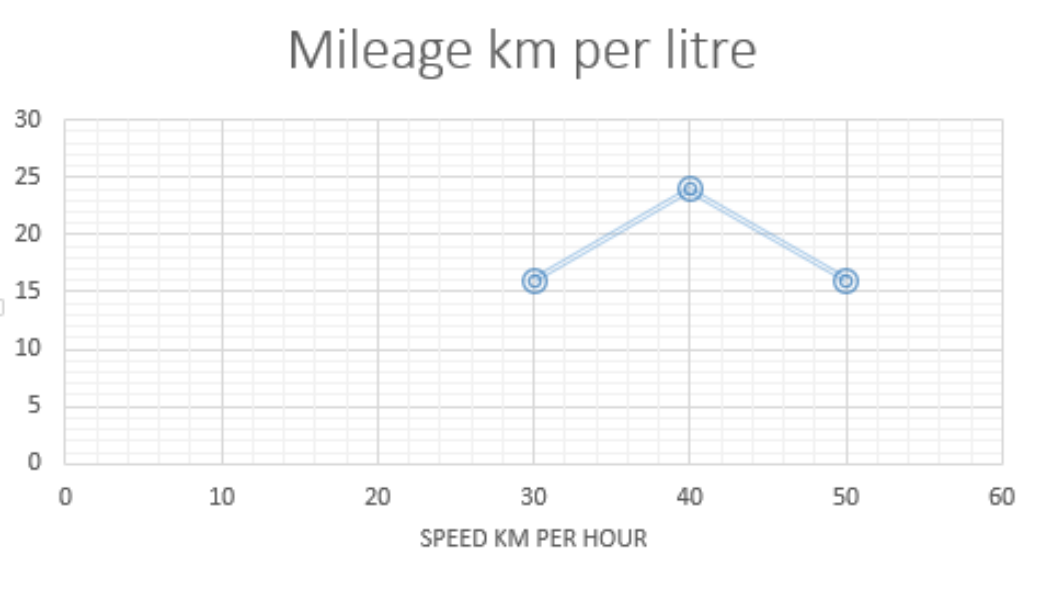
**105.** What is the length of the road segment BD?

(A) 50 km
(B) 52.5 km
(C) 55 km
(D) Cannot be determined

**Questions 106 to 107**

DIRECTIONS for the following questions: These questions are based on the situation given below: Rajiv reaches city B from city A in 4 hours, driving at the speed of 35 km per hour for the first 2 hours and at 45 km per hour for the next two hours. Aditi follows the same route, but drives at three different speeds: 30, 40 and 50 km per hour, covering an equal distance in each speed segment. The two cars are similar with petrol consumption characteristics (km per litre) shown in the figure below.

| Speed km per hour | Mileage km per litre |
|---|---|
| 30 | 16 |
| 40 | 24 |
| 50 | 16 |




**106.** The amount of petrol consumed by Aditi for the journey is

(A) 8.3 litres

(B) 8.6 litres

(C) 8.9 litres

(D) 9.2 litres

**107.** Zoheb would like to drive Aditi's car over the same route from A to B and minimize the petrol consumption for the trip. The amount of petrol required by him is

(A) 6.67 litres

(B) 7 litres

(C) 6.33 litres

(D) 6.0 litres

**Questions 108 to 110**

DIRECTIONS for questions:

These questions are based on the situation given below:

Recently, Ghosh Babu spent his winter vacation on Kyakya Island. During the vacation, he visited the local casino where he came across a new card game. Two players, using a normal deck of 52 playing cards, play this game. One player is called the Dealer and the other is called the Player. First, the Player picks a card at random from the deck. This is called the base card. The amount in rupees equal to the face value of the base card is called the base amount. The face values of Ace, King, Queen and Jack are ten. For other cards, the face value is the number on the card. Once, the Player picks a card from the deck, the Dealer pays him the base amount. Then the dealer picks a card from the deck and this card is called the top card. If the top card is of the same suit as the base card, the Player pays twice the base amount to the Dealer. If the top card is of the same colour as the base

card (but not the same suit) then the Player pays the base amount to the Dealer. If the top card happens to be of a different colour than the base card, the Dealer pays the base amount to the Player. Ghosh Babu played the game 4 times. First time he picked eight of clubs and the Dealer picked queen of clubs. Second time, he picked ten of hearts and the dealer picked two of spades. Next time, Ghosh Babu picked six of diamonds and the dealer picked ace of hearts. Lastly, he picked eight of spades and the dealer picked jack of spades. Answer the following questions based on these four games.

**108.** If Ghosh Babu stopped playing the game when his gain would be maximized, the gain in Rs. would have been

(A) 12
(B) 20
(C) 16
(D) 4

---

**109.** The initial money Ghosh Babu had (before the beginning of the game sessions) was Rs. X. At no point did he have to borrow any money. What is the minimum possible value of X?

(A) 16
(B) 8
(C) 100
(D) 24

---

**110.** If the final amount of money that Ghosh Babu had with him was Rs. 100, what was the initial amount he had with him?

(A) 120
(B) 8
(C) 4
(D) 96

---

**Questions 111 to 120**

DIRECTIONS for questions: Each question consists of five statements followed by options consisting of three statements put together in a specific order. Choose the option which indicates a valid argument, that is, where the third statement is a conclusion drawn from the preceding two statements. Example:

A. All cigarettes are hazardous to health.

B. Brand X is a cigarette.

C. Brand X is hazardous to health.

ABC is a valid option, where statement C can be concluded from statements A and B.

**111.** A. All software companies employ knowledge workers. B. Tara Tech employs knowledge workers. C. Tara Tech is a software company. D. Some software companies employ knowledge workers. E. Tara Tech employs only knowledge workers.

(A) ABC
(B) ACB
(C) CDB
(D) ACE

---

**112.** A. Traffic congestion increases carbon monoxide in the environment. B. Increase in carbon monoxide is hazardous to health. C. Traffic congestion is hazardous to health. D. Some traffic congestion does not cause increased carbon monoxide. E. Some traffic congestion is not hazardous to health.

(A) CBA
(B) BDE
(C) CDE
(D) BAC

---

**113.** A. Apples are not sweets. B. Some apples are sweet. C. All sweets are tasty. D. Some apples are not tasty. E. No apple is tasty.

(A) CEA
(B) BDC
(C) CBD
(D) EAC

---

**114.** A. Some towns in India are polluted. B. All polluted towns should be destroyed. C. Town Meghana should be destroyed. D. Town Meghana is polluted. E. Some towns in India should be destroyed.

(A) BDE
(B) BAE
(C) ADE
(D) CDB

---

**115.** A. No patriot is a criminal. B. Bundledas is not a criminal. C. Bundledas is a patriot. D. Bogusdas is not a patriot. E. Bogusdas is a criminal.

(A) ACB
(B) ABC
(C) ADE
(D) ABE

---

**116.** A. Ant eaters like ants. B. Boys are ant eaters. C. Balaram is an ant eater. D. Balaram likes ants. E. Balaram may eat ants.

(A) DCA
(B) ADC
(C) ABE
(D) ACD

**117.** A. All actors are handsome. B. Some actors are popular. C. Ram is handsome. D. Ram is a popular actor. E. Some popular people are handsome.

(A) ACD
(B) ABE
(C) DCA
(D) EDC

**118.** A. Modern industry is technology driven. B. BTI is a modern industry. C. BTI is technology driven. D. BTI may be technology driven. E. Technology driven industry is modem.

(A) ABC
(B) ABD
(C) BCA
(D) EBC

**119.** A. All Golmal islanders are blue coloured people. B. Some smart people are not blue coloured people. C. Some babies are blue coloured. D. Some babies are smart. E. Some smart people are not Golmal islanders.

(A) BCD
(B) ABE
(C) CBD
(D) None of the above

**120.** A. MBAs are in great demand. B. Ram and Sita are in great demand. C. Ram is in great demand. D. Sita is in great demand. E. Ram and Sita are MBAs.

(A) ABE
(B) ECD
(C) AEB
(D) EBA

**Questions 121 to 124**

DIRECTIONS for questions: Each question has a main statement followed by four statements labelled A, B, C and D. Choose the ordered pair of statements where the first statement implies the second, and the two statements are logically consistent with the main statement.

**121.** Either the orangutan is not angry, or he frowns upon the world. A. The orangutan frowns upon the world. B. The orangutan is not angry. C. The orangutan does not frown upon the world. D. The orangutan is angry.

(A) CB only
(B) DA only
(C) AB only
(D) CB and DA

**122.** Either Ravana is a demon, or he is a hero. A. Ravana is a hero. B. Ravana is a demon. C. Ravana is not a demon. D. Ravana is not a hero.

(A) CD only
(B) BA only
(C) CD and BA
(D) DB and CA

**123.** Whenever Rajeev uses the internet, he dreams about spiders. A. Rajeev did not dream about spiders. B. Rajeev used the internet. C. Rajeev dreamt about spiders. D. Rajeev did not use the internet.

(A) AD
(B) DC
(C) CB
(D) DA

---

**124.** If I talk to my professors, then I do not need to take a pill for headache. A. I talked to my professors. B. I did not need to take a pill for headache. C. I needed to take a pill for headache. D. I did not talk to my professors.

(A) AB only
(B) DC only
(C) CD only
(D) AB and CD

---

**Questions 125 to 134**

DIRECTIONS for questions: Each question has a set of four statements. Each statement has three segments. Choose the alternative where the third segment in the statement can be logically deduced using both the preceding two, but not just from one of them.

**125.** A. No cowboys laugh. Some who laugh are sphinxes. Some sphinxes are not cowboys. B. All ghosts are fluorescent. Some ghosts do not sing. Some singers are not fluorescent. C. Cricketers indulge in swearing. Those who swear are hanged. Some who are hanged are not cricketers. D. Some crazy people are pianists. All crazy people are whistlers. Some whistlers are pianists.

(A) A and B
(B) C only
(C) A and D
(D) D only

---

**126.** A. All good people are knights. All warriors are good people. All knights are warriors. B. No footballers are ministers. All footballers are tough. Some ministers are players. C. All pizzas are snacks. Some meals are pizzas. Some meals are snacks. D. Some barkers are musk-deer. All barkers are sloth bears. Some sloth bears are musk-deer.

(A) C and D
(B) B and C
(C) A only
(D) C only

---

**127.** A. Dinosaurs are pre-historic creatures. Water-buffaloes are not dinosaurs. Water-buffaloes are not pre- historic creatures. B. All politicians are frank. No frank people are crocodiles. No crocodiles are politicians. C. No diamond is quartz. No opal is quartz. Diamonds are opals. D. All monkeys like bananas. Some GI Joes like bananas. Some GI Joes are monkeys.

(A) C only
(B) B only
(C) A and D
(D) B and C

---

**128.** A. All earthquakes cause havoc. Some landslides cause havoc. Some earthquakes cause landslides. B. All glass things are transparent. Some curios are glass things. Some curios are transparent. C. All clay objects are brittle. All XY are clay objects. Some XY are brittle. D. No criminal is a patriot. Ram is not a patriot. Ram is a criminal.

(A) D only
(B) B only
(C) C and B
(D) A only

---

**129.** A. MD is an actor. Some actors are pretty. MD is pretty. B. Some men are cops. All cops are brave. Some brave people are cops. C. All cops are brave. Some men are cops. Some men are brave. D. All actors are pretty; MD is not an actor; MD is not pretty.

(A) D only
(B) C only
(C) A only
(D) B and C

---

**130.** A. All IIMs are in India. No BIMs are in India. No IIMs are BIMs. B. All IIMs are in India. No BIMs are in India. No BIMs are IIMs. C. Some IIMs are not in India. Some BIMs are not in India. Some IIMs are BIMs. D. Some IIMs are not in India. Some BIMs are not in India. Some BIMs are IIMs.

(A) A and B
(B) C and D
(C) A only
(D) B only

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**131.** A. Citizens of Yes Islands speak only the truth. Citizens of Yes Islands are young people. Young people speak only the truth. B. Citizens of Yes Islands speak only the truth. Some Yes Islands are in Atlantic. Some citizens of Yes Islands are in the Atlantic. C. Citizens of Yes Islands speak only the truth. Some young people are citizens of Yes Islands. Some young people speak only the truth. D. Some people speak only the truth. Some citizens of Yes Islands speak only the truth. Some people who speak only the truth are citizens of Yes Islands.

(A) A only
(B) B only
(C) C only
(D) D only

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**132.** A. All mammals are viviparous. Some fish are viviparous. Some fish are mammals. B. All birds are oviparous. Some fish are not oviparous. Some fish are birds. C. No mammal is oviparous. Some creatures are oviparous and some are not. Some creatures are not mammals. D. Some creatures are mammals. Some creatures are viviparous. Some mammals are viviparous.

(A) A only
(B) B only
(C) C only
(D) D only

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**133.** A. Many singers are not writers. All poets are singers. Some poets are not writers. B. Giants climb beanstalks. Some chicken do not climb beanstalks. Some chicken are not giants. C. All explorers live in snowdrifts. Some penguins live in snowdrifts. Some penguins are explorers. D. Amar is taller than Akbar. Anthony is shorter than Amar. Akbar is shorter than Anthony.

(A) A only
(B) B only
(C) B and C
(D) D only

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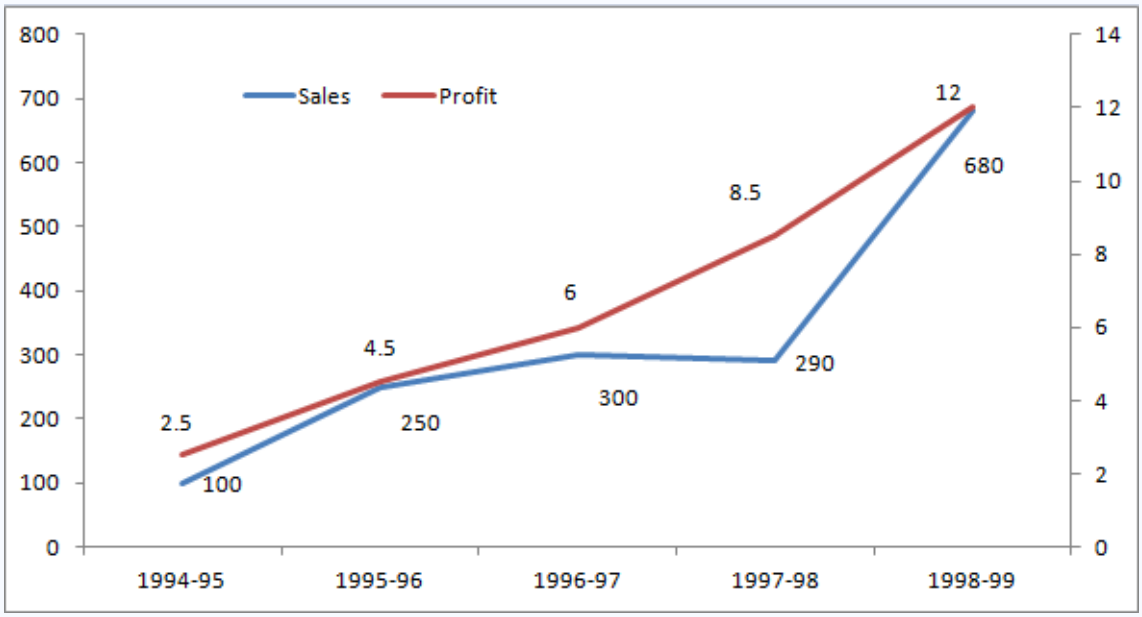
**134.** A. A few farmers are rocket scientists. Some rocket scientists catch snakes. A few farmers catch snakes. B. Poonam is a kangaroo. Some kangaroos are made of teak. Poonam is made of teak. C. No bulls eat grass. All matadors eat grass. No matadors are bulls. D. Some skunks drive Cadillacs. All skunks are polar bears. Some polar bears drive Cadillacs.

(A) B only
(B) A and C
(C) C only
(D) C and D

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## Questions 135 to 138

These questions are based on the situation given below:
The figure below presents sales and net profit, in Rs. Crores, of IVP Ltd for the five years from 1994-95 to 1998-99. During this period, the sales increased from Rs.100 Crores to Rs. 680 Crores. Correspondingly, the net profit increased from Rs. 2.5 Crores to Rs. 12 Crores. Net profit is defined as the excess of sales over total costs.




**135.** The highest percentage of growth in sales, relative to the previous year, occurred in

(A) 1995-96
(B) 1996-97
(C) 1997-98
(D) 1998-99

**136.** The highest percentage growth in net profit, relative to the previous year, was achieved in

(A) 1998-99
(B) 1997-98
(C) 1996-97
(D) 1995-96

**137.** Defining profitability as the ratio of net profit to sales, IVP Ltd. recorded the highest profitability in

(A) 1998-99
(B) 1997-98
(C) 1994-95
(D) 1996-97

**138.** With regarded to profitability as defined in the earlier question, it can be concluded that

(A) Profitability is non-decreasing during the five years from 1994-95 to 1998-99.
(B) Profitability is non-increasing during the five years from 1994-95 to 1998-99.
(C) Profitability remained constant during the five years from 1994 - 95 to 1998 -99.
(D) None of the above.

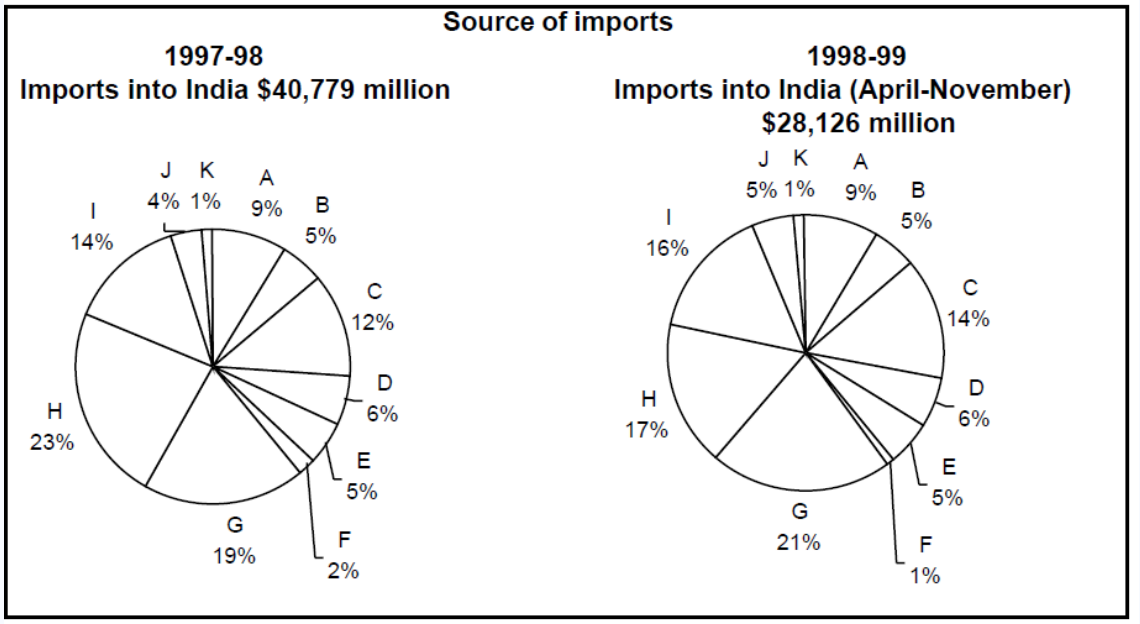
**Questions 139 to 144**

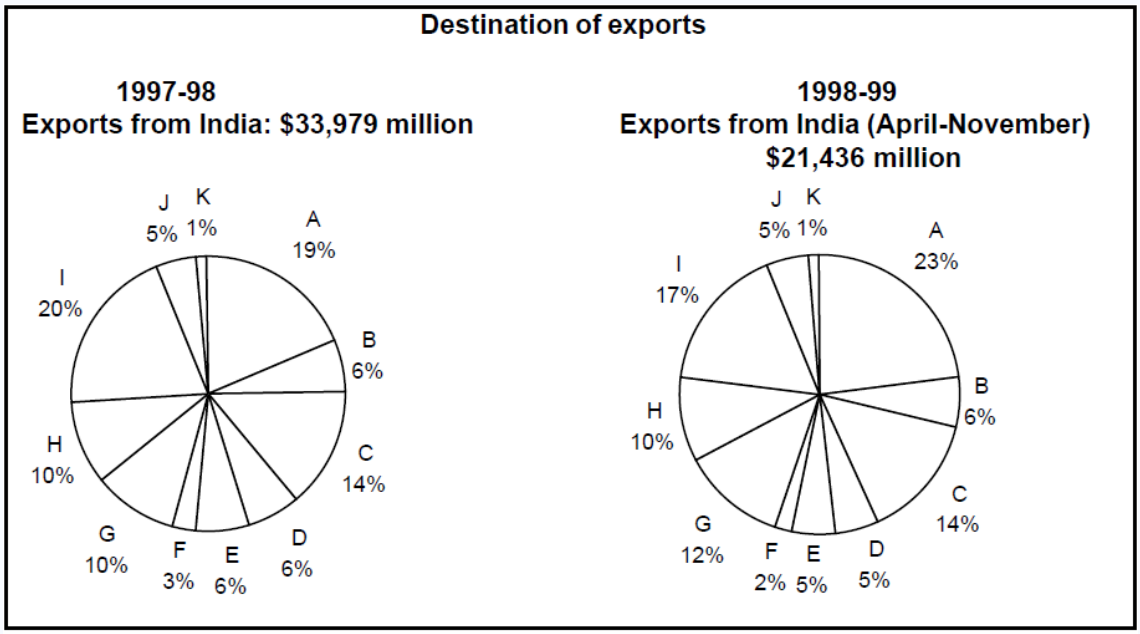
Consider the information provided in the figure below relating to India's foreign trade in 1997-98 and the first eight months of 1998-99.

Total trade with a region is defined as the sum of exports to and imports from that region.
Trade deficit is defined as the excess of imports over exports. Trade deficit may be negative.

A:USA. B:Germany C:Other EU. D:U.K. E:Japan F:Russia

G:Other East Europe H:OPEC I:Asia J:Other LDCs K:Others




**139.** What is the region with which India had the highest total trade in 1997-98?

(A) USA
(B) Other E. U.
(C) OPEC
(D) Others


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**140.** In 1997-98 the amount of Indian exports, in millions US $, to the region with which India had the lowest total trade, is approximately

(A) 750
(B) 340
(C) 220
(D) 440

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**141.** In 1997-98, the trade deficit with respect to India, in billions of US $, for the region with the highest trade deficit with respect to India, is approximately equal to

(A) 6.0
(B) 3.0
(C) 4.5
(D) 7.5

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**142.** What is the region with the lowest trade deficit with India in 1997-98?

(A) USA
(B) Asia
(C) Others
(D) Other E. U.

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**143.** Assume that the average monthly exports from India and imports to India during the remaining four months of 1998-99 would be the same as that for the first eight months of the year. What is the region to which India's exports registered the highest percentage growth between1997-98 and 1998-99?

(A) Other East European Countries
(B) USA
(C) Asia
(D) Exports have declined, no growth

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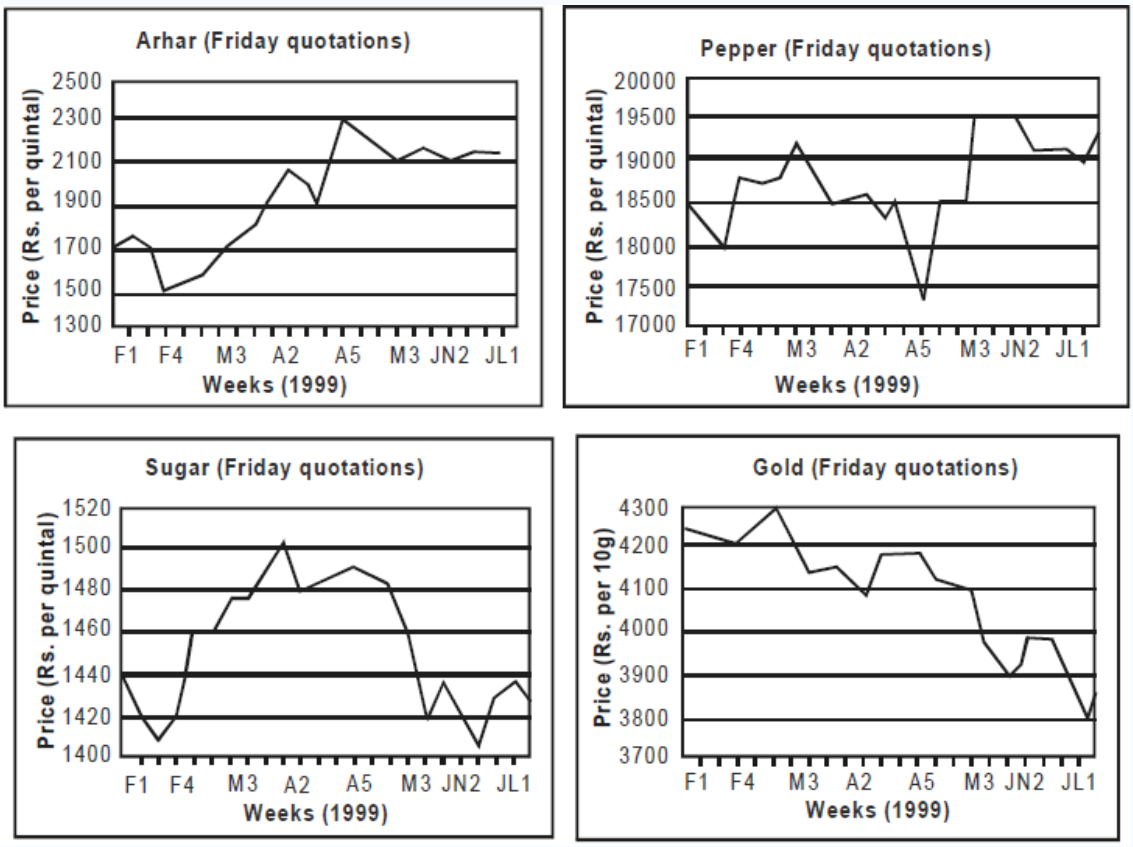
**144.** Assume that the average monthly exports from India and imports to India during the remaining four months of 1998-99 would be the same as that for the first eight months of the year. What is the percentage growth rate in India's total trade deficit between 1997-98 and 1998-99?

(A) 43.5
(B) 47.5
(C) 50
(D) 40

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## Questions 145 to 148

These questions are based on the price fluctuations of four commodities - arhar, pepper, sugar and gold during February - July 1999 as described in the figures below:




**145.** Price change of a commodity is defined as the absolute difference in ending and beginning prices expressed as a percentage of the beginning. What is the commodity with the highest price change?

(A) Arhar
(B) Pepper
(C) Sugar
(D) Gold

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**146.** Price volatility (PV) of a commodity is defined as follows: PV = (highest price during the period - lowest price during the period / average price during the period. What is the commodity with the lowest price volatility?

(A) Arhar
(B) Pepper
(C) Sugar
(D) Gold

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**147.** Mr. X, a funds manager with an investment company invested 25% of his funds in each of the four commodities at the beginning of the period. He sold the commodities at the end of the period. His investments in the commodities resulted in:

(A) 17% profit
(B) 5.5% loss
(C) no profit, no loss
(D) 4.3% profit

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**148.** The price volatility of the commodity with the highest PV during the Febrauary-July period is approximately equal to:

(A) 3%
(B) 40%
(C) 20%
(D) 12%

**Questions 149 to 155**

These questions are based on the table below presenting data on percentage population covered by drinking water and sanitation facilities in selected Asian countries.

| | Drinking water | | | Sanitation facilities | | |
|---|---|---|---|---|---|---|
| | Urban | Rural | Total | Urban | Rural | Total |
| **India** | 85 | 79 | 81 | 70 | 14 | 29 |
| Bangladesh | 99 | 96 | 97 | 79 | 44 | 48 |
| China | 97 | 56 | 67 | 74 | 7 | 24 |
| Pakistan | 82 | 69 | 74 | 77 | 22 | 47 |
| Philippines | 92 | 80 | 86 | 88 | 66 | 77 |
| Indonesia | 79 | 54 | 62 | 73 | 40 | 51 |
| Sri Lanka | 88 | 52 | 57 | 68 | 62 | 63 |
| Nepal | 88 | 60 | 63 | 58 | 12 | 1 |

(*Source:* World Resources 1998-99, p. 251, UNDP, UNEP and World Bank.)

Country A is said to dominate B or A > B if A has higher percentage in total coverage for both drinking water and sanitation facilities, and, B is said to be dominated by A, or B < A. A country is said to be on the coverage frontier if no other country dominates it. Similarly, a country is not on the coverage frontier if it is dominated by at least one other country.

**149.** What are the countries on the coverage frontier?

(A) India and China
(B) Sri Lanka and Indonesia
(C) Philippines and Bangladesh
(D) Nepal and Pakistan

**150.** Which of the following statements are true? A. India > Pakistan and India > Indonesia B. India > China and India > Nepal C. Sri Lanka > China D. China > Nepal

(A) A and C
(B) B and D
(C) A, B and C
(D) B, C and D

**151.** Using only the data presented under Sanitation facilities columns, it can be concluded that rural population in India, as a

percentage of its total population is approximately

(A) 76
(B) 70
(C) 73
(D) Cannot be determined

**152.** Again, using only the data presented under Sanitation facilities columns, sequence China, Indonesia and Philippines in ascending order of rural population as a percentage of their respective total populations. The correct order is:

(A) Philippines, Indonesia, China
(B) Indonesia, China, Philippines
(C) Indonesia, Philippines, China
(D) China, Indonesia, Philippines

**153.** India is not on the coverage frontier because A. it is lower than Bangladesh in terms of coverage of drinking water facilities. B. it is lower than Sri Lanka in terms of coverage of sanitation facilities. C. it is lower than Pakistan in terms of coverage of sanitation facilities. D. it is dominated by Indonesia.

(A) A and B
(B) A and C
(C) D
(D) None of these

**154.** These relate to the above table with the additional provison that the gap between the population coverages of 'sanitation facilities' and 'drinking water facilities' is a measure of disparity in coverage. The country with the most disparity in coverage of rural sector is

(A) India
(B) Bangladesh
(C) Nepal
(D) None of these

**155.** These relate to the above table with the additional provison that the gap between the population coverages of 'sanitation facilities' and 'drinking water facilities' is a measure of disparity in coverage. The country with the least disparity in coverage of urban sector is

(A) India
(B) Pakistan
(C) Philippines
(D) None of these

**Questions 156 to 165**

Each question is followed by two statements, A and B. Choose the option based on the given statements and questions

**156.** The average weight of students in a class is 50 kg. What is the number of students in the class? A. The heaviest and the lightest members of the class weigh 60 kg and 40 kg respectively. B. Exclusion of the heaviest and the lightest members from the class does not change the average weight of the students.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.
(B) The question can be answered by using either statement alone.
(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.
(D) The question cannot be answered even by using both statements together.

**157.** A small storage tank is spherical in shape. What is the storage volume of the tank? A. The wall thickness of the tank is 1 cm. B. When the empty spherical tank is immersed in a large tank filled with water,20 litres of water overflow from the large tank.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**158.** Mr. X starts walking northwards along the boundary of a field, from point A on the boundary, and after walking for 150 metres reaches B, and then walks westwards, again along the boundary, for another 100 metres when he reaches C. What is the maximum distance between any pair of points on the boundary of the field? A.The field is rectangular in shape. B.The field is a polygon, with C as one of its vertices and A the mid point of a side.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**159.** A line graph on a graph sheet shows the revenue for each year from 1990 through 1998 by points and joins the successive points by straight line segments. The point for revenue of 1990 is labelled A, that for 1991 as B, and that for 1992 as C. What is the ratio of growth in revenue between 91-92 and 90-91? A.The angle between AB and X-axis when measured with a protractor is 40 degrees, and the angle between CB and X-axis is 80 degrees. B.The scale of Y-axis is 1 cm = 1000 Rs.

(A) Choose 1 if the question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) Choose 2 if the question can be answered by using either statement alone.

(C) Choose 3 if the question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) Choose 4 if the question cannot be answered even by using both statements together.

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**160.** There is a circle with centre C at the origin and radius r cm. Two tangents are drawn from an external point D at a distance d cm from the centre. What are the angles between each tangent and the X-axis? A.The coordinates of D are given B.The X-axis bisects one of the tangents.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**161.** Find a pair of real numbers x and y that satisfy the following two equations simultaneously. It is known that the values of a, b, c, d, e and f are non-zero. ax + by = c dx + ey = f A. a = kd and b = ke, c = kf, k is not equal to 0 B. a = b = 1, d = e = 2, f is not equal to 2c

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**162.** Three professors A, B and C are separately given three sets of numbers to add. They were expected to find the answers to 1+1, 1+1+2, and 1+1 respectively. Their respective answers were 3, 3, and b How many of the professors are mathematicians? A. A mathematician can never add two numbers correctly, but can always add three numbers correctly. B. When a mathematician makes a mistake in a sum, the error is + I or -1.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**163.** How many among the four students A, B, C and D have passed the exam'? A.The following is a true statement: A and B passed the exam. B.The following is a false statement: At least one among C and D has passed the exam.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**164.** What is the distance x between two cities A and B in integral number of Kms? A.x satisfies the equation $\log_2 x = \sqrt{x}$ B. x less than or equal to 10 Kms

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

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**165.** Mr. Mendel grew one hundred flowering plants from black seeds and white seeds, each seed giving rise to one plant. A plant gives flowers of only one colour. From a black seed comes a plant giving red or

blue flowers. From a white seed comes a plant giving red or white flowers. How many black seeds were used by Mr. Mendel? A. The number of plants with white flowers was 10. B. The number of plants with red flowers was 70.

(A) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(B) The question can be answered by using either statement alone.

(C) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(D) The question cannot be answered even by using both statements together.

**- End of Question Paper -**