

Ref: AIMCAT1112-2B

INSTRUCTIONS

1. Read the instructions given at the beginning/end of each section or at the beginning of a group of questions very carefully.
2. This test has three sections with 60 questions – 20, 20, and 20 respectively in the first, second and third sections. The TOTAL TIME available for the paper is **135 minutes**. The student may apportion this time among various sections as he/she wishes. However, the student is expected to show his/her competence in all the three sections.
3. All questions carry three marks each. Each wrong answer will attract a penalty of one mark.

SECTION – I
Number of Questions = 20

DIRECTIONS for questions 1 and 2: In each of the following questions, a word has been used in sentences in different ways. Choose the option corresponding to the sentence in which the usage of the word is **incorrect** or **inappropriate**.

1. OPEN
 - (1) The offer is open to all citizens of India.
 - (2) The teacher asked the students to open their books at page twenty.
 - (3) The police were forced to open fire at the mob which went on a rampage.
 - (4) I was so tired and sleepy that I found it difficult to keep my eyes open.

2. HEAD
 - (1) We must act quickly and try to solve the problem before the situation comes to head.
 - (2) She manages to keep a cool head even during the most trying of circumstances.
 - (3) My eleven year old daughter is already a head taller than me.
 - (4) The child seems to have a head for numbers.

DIRECTIONS for questions 3 to 5: Read the following passage and answer the questions that follow it.

So much has changed in the last one year. The World Trade Organization (WTO), which used to figure in the media on a daily basis till about a year ago, has gone off the radar screen of journalists. The outrage sparked off by the economic collapse has apparently drowned the voices of the advocates for free trade.

Every government, irrespective of its ideological slant, is now avowedly committed to sparking a stimulus. Nothing illustrates this better than the breathtaking rediscovery of John Maynard Keynes' body of work in economics by governments and government-sponsored economists. And, as Milton Friedman, the high priest of neoliberal economics, said in 1965, "We are all Keynesians now."

Keyne's work, especially his classic, *The General Theory of Employment, Interest and Money*, laid the ground for concerted effort by governments across the world to save capitalism from its own excesses. More specifically, it contained prescriptions for governments to lay the basis for a sustained economic revival. Government spending, Keynes famously argued, has a multiplier effect on the economy. A bout of spending in round one, by translating into the expansion of incomes, consumption and investments (not necessarily in that order) has a cascading effect, resulting in a further boost to incomes in round two. This he termed the multiplier effect. Simply put, a rupee spent now, will cause incomes to expand by a multiple of one rupee.

But not all multipliers are the same. In fact, two stimulus packages of the same value can result in two very different values of the multiplier, depending on the kind of social classes that benefit from the stimulus. Generally speaking, rupee for rupee, the expansion of the incomes for the poor is likely to have a larger impact because the poor tend to consume a greater proportion of their incomes than the rich. This will happen because the rich would typically tend to 'hoard' incomes, especially when faced with extreme uncertainty that recessions imply.

Any stimulus package is also critically dependent on the import intensity of an economy. Other things remaining the same, an economy with a greater import intensity is likely to experience a larger "leakage" across its borders. This is because entities located outside the country will benefit from the stimulus package. The impulse of countries to engage in protectionism is to be seen in this context, although it is important to reiterate that this is not the only reason why countries indulge in protectionism.

It is obvious that countries implementing a stimulus package would want more 'bang for their buck'. Why would they want other nations to benefit from their spending? Raising tariffs, or curbing imports through other devices, would be a rational course to adopt in order to maximize the impact of their spending.

Moreover, the rising tide of unemployment is likely to force governments to rearrange their priorities. Poor workers - defined as those earning about Rs.150 a day - are likely to account for about 45 per cent of the economically active population in the world.

Nearly 3.6 million jobs in the U.S. have been wiped out since the current recession started in December 2007. Half of these have happened in the last three months. By the end of the year it is estimated that 3.5 million jobs will be lost in the European Union.

Is it surprising then that the French minister of the economy, recently said protectionism is "a necessary evil" in these times? President Barack Obama's 'Buy American!' slogan is a sign of things to come – a world in which the advanced countries slam their doors shut to others while advocating the myth that is Free Trade.

3. Which of the following does the passage suggest could governments do in order to get "more bang for their buck"?
 - I. Raise duty on imported goods.
 - II. Impose restrictions on imports.
 - III. Encourage exports.
 - IV. Adopt protectionist measures.
 - V. Increase government spending.

(1) Only I, II and IV (2) Only V
(3) Only III (4) Only I, II and V
 4. According to the passage, governments across the world are looking
 - (1) for new ideas to revive the global economy.
 - (2) for ways of implementing Keynes recipe for reviving the economy.
 - (3) for ways to save themselves from capitalism.
 - (4) for methods to save capitalism from its excesses.
 5. Which of the following best summarizes the idea conveyed in the first para?
 - (1) The World Trade Organisation, which has been promoting free trade has become irrelevant and non-newsworthy following the global recession.
 - (2) With recession capturing headlines and proving the proponents of free trade wrong, the WTO is no longer attracting media attention.
 - (3) The World Trade Organisation is not in the news now because economic collapse following the recession has silenced the proponents of free trade.
 - (4) The World Trade Organisation does not make news anymore because economic collapse seems to have rendered irrelevant proponents of free trade.
- DIRECTIONS for questions 6 to 8:** In each of the following questions, there are five sentences or parts of sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the **most appropriate** option.
6. (A) Little has changed in Qunatra, former capital of the Syrian Golan Heights,
(B) since Israeli forces withdrew behind the barbed wires and minefields of the ceasefire line in 1974.
(C) A mosque crumbles slowly into the grass, a Greek Orthodox church visited by Pope John Paul II in 2001 lay abandoned.
(D) Here a ruined school, there a gutted hospital or a flattened home.
(E) Syria has made no attempt to rebuild as it prefers symbolism for salvage.
(1) B, C and D (2) A, B and D
(3) D and E (4) A and B
 7. (A) When an obese man with a family history of type 2 diabetes goes to see his doctor,
(B) he will be told undoubtedly to lose weight to minimize his chances of becoming diabetic.
(C) Too often, this sound but familiar advise falls on deaf ears.
(D) Now show the same patient a printout revealing that his genes make him unusually susceptible to diabetes, and the picture changes.
(E) Suddenly the patient has a new motivation to eat less and exercise more.
(1) A, B and D (2) B, D and E
(3) B and E (4) A, D and E
 8. (A) In the wake of the 2008 terrorists attack on Mumbai, many observers predicted
(B) that the outrage would prove a turning point in the global struggle on terrorism.
(C) A year on, however, it is far from clear if the attacks and the lessons they hold out,
(D) have in fact changed the world's perception
(E) of the problem of terrorism and the responses they necessitate.
(1) A, B and C (2) B, C and E
(3) A, C and D (4) B, C and D

DIRECTIONS for questions 9 to 11: Read the following passage and answer the questions that follow it.

Most great writers have never been able to prove their mettle in screenwriting. In most cases, the imprint of genius in their words just gets lost in the technological cut-and-thrust of film. Why is that a feverish, fetishistic mind that's able to produce Nobel-winning words can't write Oscar-winning scenes? Why is that their rollicking rhythm of words can't become the lyrical mobility of film? Why? After all, cinema is a logical extension of literature, its technological and modern offspring. The answers are complex, perhaps as complicated as the roiling thoughts in a great writer's head.

Cinema is an aggregate of many dazzlingly diverse technologies and personalities; literature is an aggregate of many dazzlingly diverse personal thoughts. Therein lies the basic difference. To make cinema, you need to put many heads together; to make literature, you just put all the thrumming thoughts in a single head together.

The first project to enlist writers for cinema started in Hollywood in the decade before World War II. The studios brought writers to the La – La land, locked them in rooms, supplied them with typewriters, gave them ample booze (salaries, like the writers, were big) and asked them to put their sensitive noses to the Hollywood grindstone. Ply your trade and supplicate to film. The Tenth Muse. The art form of and for the future.

Writers like Scott Fitzgerald and Bill Faulkner, who brought to the tinsel town their illuminating genius, just ended up doing routine work and became disillusioned fast. "I am utterly miserable at seeing months of work and thought negated in one hasty week," Fitzgerald lamented. Hollywood had a deleterious effect on him. He just lost it, all his blazing talent disappearing in a haze of bull-headed booziness but not before he declared cinema as a "salaried affair and along architectural rather than emotional lines".

Writers tend to write long, using their proximity to impart subtle moral lessons. Building a scene in a book may take pages, but in cinema even a Proustian setpiece can be captured in a jerky pan of the camera.

There are filmmakers like Tarkovsky and Miklos Jansco who have tried doing literature in film and succeeded. The long take is nothing but literature but when Andy Warhol used it to make his five-hour-long film *Sleep*, it ended up being a turkey. Warhol labelled it as anti-film. Was this his attempt to save literature from film? Or was it to show literature on film? No one knows.

Warhol could have described screenwriting as anti-literature. Screen dialogue is entirely different from film dialogue. A jerk of the head or a flutter of an eyelash can wield the same magic on the screen as 20 pages of bang-up prose can do in a book. Most writers, because of the nature of their complicated and intense thoughts, keep writing their intensity into a screenplay, making it muddled and almost unfilmable. To convert the depth of feeling in a book into ardour on the screen requires means that lie outside the screenwriter's purview: direction, music, editing, cinematography. And it's here that most brilliant writers fail. Either they go completely camera-crazy or they invest their film writing, so habituated are they to novel writing, with a profusion of prose.

A writer feels secure in the company of solitude and words; his anxiety is caused by the confusion within the confines of his head, not, as in the case of a screenwriter, by studio suits and formulaic producers. It's in the distillation – from confusion to clarity – he revels, not in the camera angles.

The writer doesn't allow his work to be hobbled by spatial and temporal constraints; in film only in the adept hands of a master can space and time be handled deftly. Film, in the course of a convulsive century, has progressed well; the language of cinema begot a new breed of writers - Roberto Bolano, EL Doctorow, James Salter and many others – that use film techniques to thread throbbing large themes in their books. For a good writer, it would be possible to write better cinema if he studies dutifully the films born out of a great wrestling with words, fictional words making imaginative spaces real, as real as the reality that seeps from the cinema screen. And he needs to learn that silence is cinema's most powerful symbol. Silence on a page can get lost in the labyrinths of words; in cinema, a silent frame can be as deafening as a thunder bolt.

9. The passage calls cinema
 - (1) a goddess of art.
 - (2) a thought provoking exercise.
 - (3) a plebeian art.
 - (4) a modern day wonder.

10. The passage can be described as an attempt to
 - (1) trace the genesis of screenwriting.
 - (2) compare and contrast literature and cinema.
 - (3) bring out the difficulties of a writer in becoming successful in screenwriting.
 - (4) go into why even great writers fail in cinema.

11. Which of the following is "NOT TRUE" according to the passage?
 - (1) Anyone who tries literature in cinema is bound to fail.
 - (2) Cinema involves pooling the thoughts of many together.
 - (3) A writer is more comfortable when left alone.
 - (4) Cinema writing is a financially lucrative vocation.

DIRECTIONS for questions 12 and 13: The following questions have sentences with two blanks. Given below the questions are pairs of words. Choose the pair that best completes the sentence.

12. Decades of cronyism, corruption and secretive policy-making have created widespread _____ of politics in Japan, hence there is a need to ensure greater _____ in order to transform Japanese politics.
 - (1) disillusionment . . . conspiracy
 - (2) despondency . . . judiciousness
 - (3) distrust . . . transparency
 - (4) repugnance . . . accountability

13. Evidence from several countries indicates that _____ pictorial warnings alongside printed text can persuade tobacco users to quit the self-destructive habit and can _____ new users.
 - (1) grotesque . . . coerce
 - (2) bizarre . . . inveigle
 - (3) graphic . . . exhort
 - (4) emotive . . . deter

DIRECTIONS for questions 14 to 16: Read the following passage and answer the questions that follow it.

At the disputed crossroads where economics and ethics meet stands Amartya Sen, a Nobel-prize-winning economist who thinks like a philosopher. In a dauntingly impressive flow of books and papers over 40 years he has done much to change both disciplines for the better, humanising the one, bringing content from the real world to the other. His work is technical, however, and the fine detail has sometimes hidden the shape of the whole. Mr Sen's latest book answers both difficulties in magisterial style.

In the courtliest of tones, Mr Sen charges John Rawls, an American philosopher who died in 2002, with sending political thinkers up a tortuous blind alley. The Rawlsian project of trying to describe ideally just institutions is a distracting and ultimately fruitless way to think about social injustice, Mr Sen complains. Such a spirited attack against possibly the most influential English-speaking political philosopher of the past 100 years will alone excite attention.

"The Idea of Justice" serves also as a commanding summation of Mr Sen's own work on economic reasoning and on the elements and measurement of human well-being. It is often intricate but never worthy. Conceptual subtleties flank blunt accounts of famine's causes or physical handicap's economic effects. A conviction that economists and philosophers are in business to improve the world burns on almost every page.

Mr Sen writes with dry wit, a feel for history and a relaxed cosmopolitanism. He presumes that the values in play are of global, not purely Western, import. Earlier thinkers he cites on justice and toleration come less from fourth-century Athens or 17th-century England than from India, where he was born 75 years ago. Growing up in Bengal, he learned about poverty and equality directly, not from books.

Two themes predominate: economic rationality and social injustice. Mr Sen approaches them alike. He can, when he wants, theorise without oxygen at any height. But he believes that theory, to be of use, must keep its feet on the ground. Modern theorists in his view have drifted too far from the actual world.

Economists have tended to content themselves with a laughably simple picture of human motivation, rationality and well-being. People are not purely self-interested. They care for others and observe social norms. They do not always reason "instrumentally", seeking least-cost means to given ends. They question the point of their aims and the worth of their wants. Well-being, finally, has no single measure and is not inscrutable to others. Its elements are many and do not boil down to "utility" or some cash-value equivalent.

Complexity, though, need not breed mystery. Well-being's diverse elements (freedom from hunger, disease, indignity and discrimination, to name four) are generally observable and, he believes, measurable. They are, to put it crudely, matters of fact, not taste, even if his philosophical story—that what underpins the several elements of well-being is that they all extend people's "capabilities"—is still argued over.

Rawls held that social justice depended on having just institutions, whereas Mr Sen thinks that good social outcomes are what matter. Strictly both could be right. The practical brunt of Mr Sen's criticism, however, is that just institutions do not ensure social justice. You can, in addition, recognise social injustices without knowing how a perfectly fair society would arrange or justify itself. Rawlsianism, though laudable in spirit, is too theoretical, and has distracted political philosophers from corrigible ills in the actual world.

Other arguments feed Mr Sen's main themes. For example, that social-choice theory (how to gauge a society's welfare from that of its members) permits good-enough, albeit incomplete, social comparisons. Also that the inevitable fact that moral judgments are made from a viewpoint does not make moral values local or subjective; that when talking of equality, you must always ask "equality of what?"; that rights carry extra weight without necessarily outweighing every concern; that justice's demands outrun countries' borders.

Mr Sen ends, suitably, with democracy. It can take many institutional forms, he says. But none succeeds without open debate about values and principles. To that vital element in public reason, as he calls it, "The Idea of Justice" is a contribution of the highest rank.

- 14.** When the author says that Sen can 'theorise without oxygen at any height', he means that
- Sen can formulate theories without much basis.
 - Sen can concoct theories which are divorced from reality.
 - no matter how difficult a subject, Sen can always formulate a theory on it.
 - Sen can strain himself beyond limits to come up with a good theory.
- 15.** As understood from the passage, which of the following is the difference between Rawl and Sen?
- Rawl is theoretical and indifferent to the ills of society, Sen is philosophical and detached from the ills of society.
- 16.** As inferred from the passage which of the following CANNOT be attributed to Amartya Sen?
- Well-being cannot be equated to mere utility or material things.
 - Rawlsian project cannot achieve social justice.

- (3) The components of well-being are not measurable.
- (4) Economists and philosophers seek to make the world a better place.

DIRECTIONS for questions 17 and 18: Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the **most appropriate** way.

17. Medicine continues to be a valued career choice in India. However, the changes in the social and financial climate have also resulted in major shifts within medicine. The changed culture within medicine appears pervasive and in many ways, irreversible.

- (1) The changing cultures within medicine, with the focus on disease, cure and specialist approaches, prefer costly technology and profit to clinical evaluation, holistic care and service.
- (2) Many recent changes, some subtle and others more obvious, have had a significant impact on the practice of medicine.
- (3) Medicine today looks less of a vocation and more of a business opportunity.
- (4) The many changes have had a cumulative effect and have resulted in increased costs and reduced access to health care for the majority of the population.

18. Zakynthos has a long and rich musical tradition. You can say music flows in their veins. It is only fitting then that the first music school to be established in Greece was here in 1815. Parallel to music, theatre flourished as far back as the 15th century.

- (1) Many distinguished and celebrated poets and writers are native sons of Zakynthos.
- (2) Zakynthos is a cultural beacon in the middle of the Ionian sea.
- (3) And all this creative renaissance happened when the Zakynthian autocracy was listening to opera.
- (4) Natives of the town are hospitable, adore music and dance, and have a predilection for arts.

DIRECTIONS for questions 19 and 20: In each of the following questions, there are five sentences/paragraphs. The sentence/paragraph labelled A is in its correct place. The four that follow are labelled B, C, D and E, and need to be arranged in the logical order to form a coherent paragraph/passage. From the given options, choose the most appropriate option.

19. (A) Mechanics is the theory that all existence, organic or inorganic, can be explained by matter, motion and force and that no other thing is necessary for an understanding of life. Physical laws and chemical elements constitute the ultimate reality of the universe.
 (B) There is creativity and freedom manifest in organic evolution. The continuous adjustment of internal to external conditions is not done in a

mechanical way, but with a definite purpose in view. There is new creation at every step, which is observed to be directed by a conscious purpose which is entirely different from blind mechanical impulse or push.

- (C) Individuals differ from one another, not in their essential constitution, but in the manner in which they manifest themselves in life. The universe is supposed to work like a machine by means of physico-chemical laws. This mechanistic scheme of life is unable to explain the purpose that is seen in Nature.
 - (D) In all this process there is noticed a synthesizing tendency which cannot be attributed to the mechanical structure of physical bodies. It is not difficult to see that beings manifest an inherent tendency to reach a goal common to all of them, which naturally makes one believe that there is a universal force at work everywhere, actuating all beings towards the attainment of their essential existence.
 - (E) Evolution is the progressive adaptation of life to its environment, a movement towards greater freedom, an assertion of the presence of a higher intelligence which seeks to overcome the obstruction of matter in greater and greater degrees. There is a creative synthesis involved not only in the progress of organic evolution, but even in the organization of electrons and protons into atoms, atoms into molecules, molecules into cells and cells into living organisms.
- | | |
|----------|----------|
| (1) CDBE | (2) BECD |
| (3) ECBD | (4) CBED |

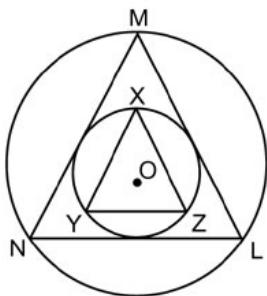
- (20. (A) Moral principles are principles concerned with establishing and maintaining proper social relations among persons with respect to issues or interests typically vital to such persons and law will be judged morally acceptable only to the extent that it is judged to be consistent with these principles.
 - (B) Every advocate for a particular value can be met by an equally persuasive and articulate advocate for a competing value, and it is by no means clear that there is any simple test for resolving the many disputes of this nature.
 - (C) Both within and between cultures, diversity and not unanimity has been one of the salient features of moralizing.
 - (D) Because of the seemingly irresolvable nature of moral disagreement and argument, moral claims can easily appear to lack objectivity and be nothing more than expressions of personal or cultural or class prejudice.
 - (E) At this point, a certain worry becomes obvious. Many different principles have been offered and many different principles are still held concerning proper social interaction.
- | | |
|----------|----------|
| (1) CEBD | (2) CBDE |
| (3) ECBD | (4) EBCD |

SECTION – II
Number of Questions = 20

DIRECTIONS for questions 21 to 40: Answer the questions independently of each other.

21. There are two points A and B where $AB = 201$ km. Two men X and Y, start from A and B towards B and A respectively. X travels 5 km in the first hour, 5.5 km in the second hour, 6 km in the third hour and so on. Y travels at a constant speed of 9 kmph. Which of the following is true?
- X travels 18 km less than Y after both have travelled for exactly 10 hours.
 - X travels 8 km less than Y after both have travelled for exactly 8 hours.
 - Both X and Y meet after exactly 12 hours of travelling.
 - None of these
22. Three persons – Amar, Akbar and Anthony, working together, complete a piece of work in a certain number of days. The number of days they take is 20 less than what Amar alone would have taken; 8 less than what Akbar alone would have taken; and half of what Anthony alone would have taken. How many days do they take to complete the work, when working together?
- 2
 - 4
 - 6
 - 8
23. The expression $5^{6R} - 3^{6R}$, where R is an odd number, is always divisible by which of the following?
- 16
 - 133
 - 931
 - All the above
24. The ratio of the common differences of two series, A and B, in arithmetic progression, is 4 : 9. If the ratio of the sums of the first 25 terms of the two series is 4 : 9. What is the ratio of the 75th terms of the two series?
- 8 : 27
 - 9 : 25
 - 16 : 81
 - None of these

25.



In the figure above, there are two concentric circles with centre O. XYZ is an equilateral triangle inscribed in the inner circle. MNL is an equilateral triangle, which circumscribes the inner circle and also happens to be perfectly inscribed in the outer circle. Find the ratio of the areas of the equilateral triangle XYZ and equilateral triangle MNL?

- 1 : 2
- 2 : 5
- 1 : 3
- None of these

26. A pyramid is made of several cubes, with 1 cube in the top most layer, 3 in the second, 6 in the third, 10 in the next layer and so on. If altogether 2626 cubes are available, how many cubes remain after making the pyramid as big as possible?
- 0
 - 20
 - 26
 - 5

27. Twenty lines are drawn in a plane such that no two lines are parallel and no more than two lines are intersecting at the same point. How many regions (finite or infinite) do they form?
- 201
 - 211
 - 209
 - None of these

28. ABCD is a square, where the diagonals AC and BD coincide with the x-axis and the y-axis respectively. Side AB lies on the line $x + y + 5 = 0$. Side CD lies on which of the following lines?
- $x - y + 5 = 0$
 - $x + y - 5 = 0$
 - $x - y - 5 = 0$
 - None of these

29. Two sides of a quadrilateral subtending a right angle between them measure 40 cm and 9 cm respectively. If the measures of the other two sides are 41 cm and 18 cm, then find the area of the quadrilateral.

- $360\sqrt{2} \text{ cm}^2$
- 532 cm^2
- 540 cm^2
- $120\sqrt{41} \text{ cm}^2$

30. Given that $-5 \leq x \leq 4$, and $5 \leq y \leq 12$, the minimum value of which of the following expressions is the least?

- $x^3y - xy^2$
- $x^2y + xy^2$
- $x^3y - xy^3$
- $y^2x + x^3y$

31. A group of new students whose total age is 221 years joins a class, because of which the strength of the class goes up by 50% but the average age of the class comes down by one year. What is the new average age of the class after the new group of students has joined, given that the original strength of the class is a two digit number greater than 30 and the new average age (in years) is known to be a natural number?

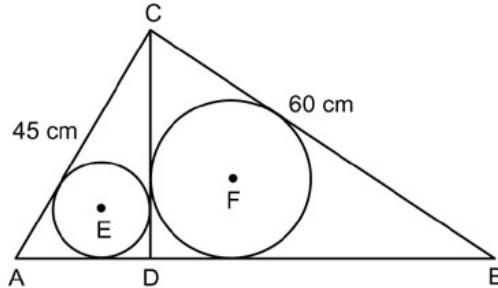
- 15 years
- 17 years
- 19 years
- 16 years

32. Let $f_{n+1}(x) = f_n(x) + 1$, if n is a multiple of 4.
 $= f_n(x) - 1$, otherwise.

If $f_1(1) = 0$, then find the value of $f_{42}(1)$.

- 20
- 21
- 22
- None of these

33.



Inside the triangle CAB, which is right-angled at C, the altitude CD is drawn to the base AB. Two circles, with centres E and F are inscribed inside the triangles as shown. If CA = 45 cm and CB = 60 cm, what is the length of EF?

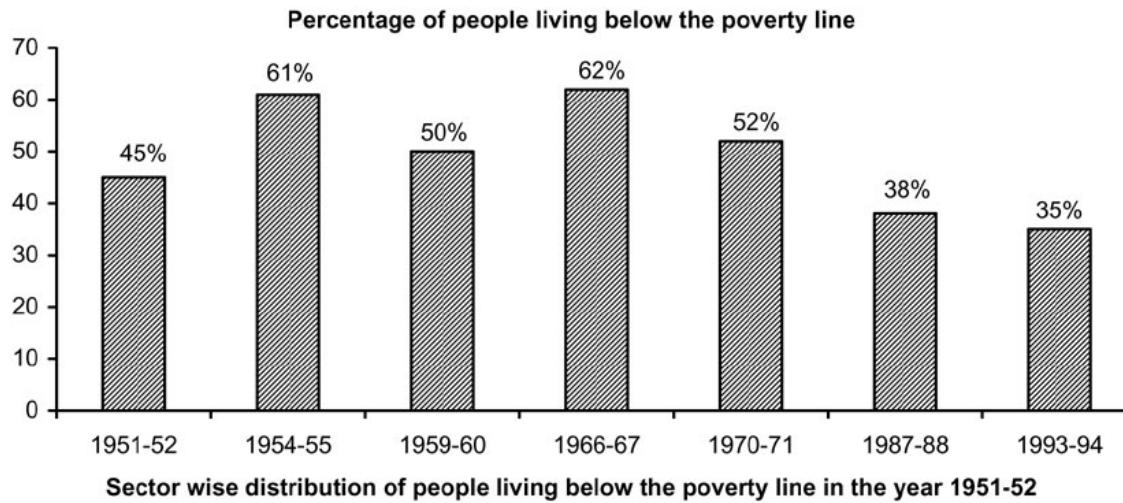
- $12\sqrt{2} \text{ cm}$
- $18\sqrt{2} \text{ cm}$
- $15\sqrt{2} \text{ cm}$
- None of these

34. If 5 is one of the roots of the quadratic equation $x^2 - (\alpha + 8)x + 9(\alpha + 1/\alpha) = 0$, where α is some positive number, which of the following could be the other root?
 (1) 3/2 (2) 2 (3) 6 (4) 3
35. A single rail track exists between stations P and Q. Everyday a super fast train, A, leaves station P, at 9:00 a.m., for station Q and as soon as it reaches station Q, a passenger train, B, leaves station Q, for station P, and reaches station P at 10:00 a.m. The speed of train B is one-third of that of a normal express train E whose speed, in turn, is one-third of that of train A. On a certain day, due to some problem in the engine, the departure of train A from station P gets delayed by half an hour. In an effort to make up for the loss in time, train A travels the entire distance from station P to station Q at twice its normal speed and when it reaches station Q, train B starts with an increased speed and reaches station P on time. Find the ratio of the new speeds of trains A and B.
 (1) 6 : 1 (2) 9 : 1 (3) 14 : 1 (4) None of these
36. In triangle PQR, PQ = 9 cm, QR = 12 cm and PR = 15 cm. A perpendicular dropped from Q, meets the side PR at S. A circle is drawn with QS as the diameter. If the circle cuts PQ and QR at points X and Y (both different from Q), find QX : QY.
 (1) 4 : 3 (2) 16 : 9 (3) 3 : 4 (4) 27 : 64
37. The students of three classes A, B and C sit for a test in Mathematics. The average scores of the students in classes A, B and C are 64, 60 and 54 respectively. The average scores of the students of classes A and C together and B and C together are both 57. Find the average score of the students of all the three classes put together.
 (1) $58\frac{1}{3}$ (2) $58\frac{4}{17}$
 (3) $58\frac{5}{17}$ (4) None of these
38. If $|x + 5| = |x - 1| + |x + 3|$, then how many distinct values of x are possible?
 (1) 0 (2) 1 (3) 2 (4) 3
39. Let $f(x) = \min(4 - 3x, x^2)$, where x is any real number. If $x \geq 0$, which of the following is true?
 (1) $f(x)$ attains its maximum value at $x = 1$.
 (2) $f(x)$ attains its maximum value at $x = 2$.
 (3) $f(x)$ attains its minimum value at $x = 4$.
 (4) $f(x)$ attains its maximum value at $x = 4$.
40. Four positive integers I, J, K and L satisfy the relation $I^L + J^L = K^L$. What can be concluded about L?
 (1) L is always less than or equal to the minimum of I, J, K.
 (2) L is always greater than or equal to the maximum of I, J, K.
 (3) L is always greater than the minimum of I, J, K and less than the maximum of I, J, K.
 (4) None of these

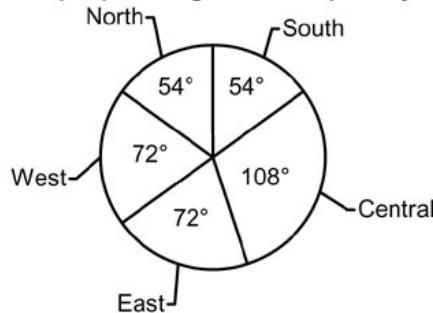
SECTION – III Number of Questions = 20

DIRECTIONS for questions 41 to 43: Answer the questions on the basis of the information given below.

The following graphs give the information about the percentage of people living below the poverty line in a country.



Sector wise distribution of people living below the poverty line in the year 1951-52



41. If 25% of the people above the poverty line and 60% of the people below the poverty line in 1970-71 lived in villages, then how many people lived in villages assuming that the population of the country in 1970-71 was 100 X?
 (1) 41.4 X (2) 17.5 X (3) 43.2 X (4) 30 X
42. If the population in 1951-52 was 100 lakh and it was growing at a steady rate of 10 lakh per year, then what is the approximate percentage increase in the number of people above the poverty line from 1951-52 to 1959-60?
 (1) 33% (2) 88% (3) 10% (4) 63%
43. Assuming that the total population and also the sector wise distribution of people living below the poverty line remain the same for the entire period shown, then the number of people living below the poverty line in the central sector in 1951-52 is what percentage more than the number of people living below the poverty line in the southern sector in 1966-67?
 (1) 45% (2) 68% (3) 17% (4) 28%

DIRECTIONS for questions 44 and 45: The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the statements are sufficient to answer the question and choose the appropriate option among the given choices.

- (1) The question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
 - (2) The question can be answered by using either statement alone.
 - (3) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.
 - (4) The question cannot be answered even by using both the statements together.
44. The largest of six distinct positive integers is 10 and the smallest is 3. What is their average?
- I. There are exactly three prime numbers in these six numbers and the sum of these six numbers is a prime number.
 - II. The sum of these six numbers is ten more than a perfect square.
45. The HCF of three numbers is 12. Their product is 17280. What are the three numbers?
- I. One of the numbers is greater than the other two numbers.
 - II. One of the numbers is lesser than the other two numbers.

DIRECTIONS for questions 46 and 47: Answer the questions on the basis of the information given below.

A trader deals in four varieties of soap – P, Q, R and S. He has a team of four salesmen – A, B, C and D. The per unit selling prices of P, Q, R and S are Rs.13, Rs.9, Rs.12 and Rs.15 respectively and the per unit costs of purchase are Rs.7, Rs.5, Rs.7 and Rs.8 respectively. In a month, A can sell five thousand, four thousand, three thousand and two thousand units of P, Q, R and S respectively, while B can sell two thousand, three

thousand, four thousand and five thousand units respectively; C can sell eleven thousand, twelve thousand, fourteen thousand and thirteen thousand units respectively; D can sell thirteen thousand, eleven thousand, fourteen thousand and twelve thousand units respectively. Each salesman must be given exactly one variety of soap to sell and no two salesmen should be assigned the same variety of soap.

46. In order to achieve the maximum possible profit, which of the following products must be assigned to D?
 (1) R (2) P (3) S (4) Q
47. If A is assigned Q and B is assigned R, which of the following would be the maximum total profit achievable by the trader?
 (1) Rs.1,86,000 (2) Rs.2,10,000
 (3) Rs.2,05,000 (4) None of these

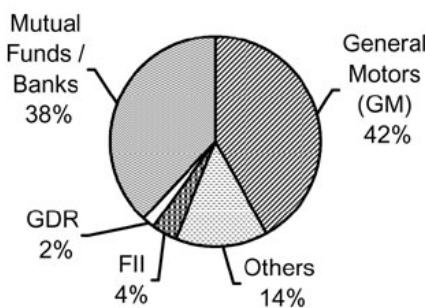
DIRECTIONS for questions 48 and 49: Answer the questions independently of each other.

48. Six persons – A through F – belonging to a family, sit around a circular table in six different coloured chairs – Red, Blue, Green, Yellow, Brown and Orange. Among them, there is a Singer, a Doctor, a Writer, a Lawyer, a Professor and a Teacher. The names, colours or the professions mentioned above are not in any particular order. Further, it is known that,
1. in that family there are exactly two fathers, two sons, two mothers, a grandmother, a daughter, two wives and a daughter-in-law.
 2. C has a father and a son; F has a mother and a grandfather; D has a wife, a son and a granddaughter. B has a sister and A has a daughter.
 3. B, the Doctor, who sits opposite a person sitting in the Red chair, sits neither adjacent to the Lawyer or the Professor nor opposite them.
 4. neither the grandfather nor the granddaughter sits in the Blue or the Yellow chair also neither of them is the Professor or the Teacher.
 5. the grandson sits in between the Writer and the grandmother. Neither can a couple sit adjacent to each other nor can two males.
 6. the Brown chair and the Yellow chair are opposite each other and the person who sits in the Yellow chair is a male.
 7. the Green chair is in between the Yellow chair and the Blue chair.
- What is the profession of B's father and in which coloured chair is he sitting?
- (1) Lawyer; Orange (2) Teacher; Blue
 (3) Professor; Yellow (4) Writer; Yellow

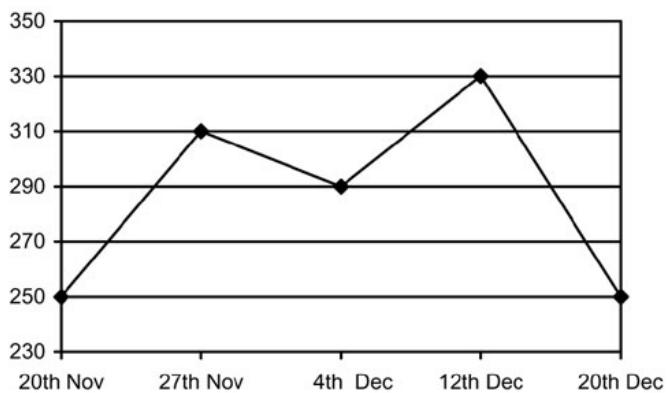
49. In a colony, 82 percent people read 'The Times of India', 78 percent people read 'The Hindu', 76 percent people read 'The Indian Express' and 72 percent people read 'The Economic Times'. At least what percentage of the colony population read all the four news papers?
 (1) 8% (2) 10% (3) 13% (4) 23%

DIRECTIONS for questions 50 to 52: Answer the questions on the basis of the information given below.

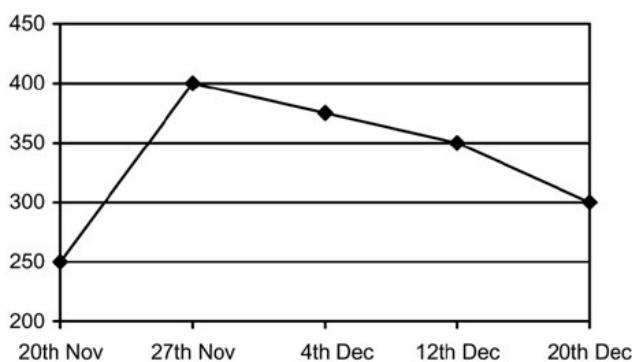
Percentage wise break-up of the shareholding pattern of United Lever (for the period 20th Nov to 20th Dec 2003)



Market value of a United Lever share from 20th Nov to 20th Dec of 2003 (in \$)



Market value of a General Motors share from 20th Nov to 20th Dec of 2003 (in \$)



50. Which of the following statements is/are true as per the graphs given?

- The percentage decrease in the value of the United Lever share from 12th December to 20th December 2003 is less than the percentage decrease in the value of the General Motors share from 27th November to 20th December 2003.
- The market value of a United Lever share is directly proportional to the market value of a General Motors share.
- The peak value attained by the United Lever share is exactly 80% of the peak value of the

General Motors share during the period 20th November to 20th December 2003.

- (4) None of these

51. What is the number of shares of United Lever held by 'Others' as on 20th December 2003, given that the difference in the value of the shares of United Lever held by General Motors and Mutual Funds/Banks as on 20th December 2003 was 250 million dollars?

- (1) 3 million (2) 3.5 million
(3) 2.75 million (4) Cannot be determined

52. What is the approximate percentage increase in the value of General Motors' holding in United Lever from 10th December 2002 to 10th December 2003, given that the value of General Motors' holding in United Lever as on 10th December 2002 was 124.88 million dollars and the difference in the value of the shares of United Lever held in the form of GDRs and that of those held by FIIs as on 15th December 2003 was 17.84 million dollars?

- (1) 200% (2) 220% (3) 180% (4) 100%

DIRECTIONS for question 53: Answer the question independently of each other.

53. Four beauties – Aishwarya, Sushmita, Lara and Priyanka – went to participate in the 'Miss Andromeda' beauty pageant. Exactly one amongst them was the winner, the 1st runner-up, the 2nd runner-up and the 3rd runner-up. When asked about the results of the beauty contest, each of them gave two replies, one of which was true and the other was false, in any order. The replies were as follows:

- | | | |
|-----------|---|---|
| Aishwarya | : | Priyanka is the 2 nd runner-up.
Sushmita is the 1 st runner-up. |
| Sushmita | : | Aishwarya is the 2 nd runner-up.
Priyanka is the 1 st runner-up. |
| Lara | : | Sushmita is the 1 st runner-up.
Aishwarya is the 3 rd runner-up. |
| Priyanka | : | I am the 3 rd runner-up.
Lara is the 1 st runner-up. |

Who was the winner?

- (1) Sushmita (2) Aishwarya
(3) Priyanka (4) Lara

DIRECTIONS for questions 54 and 55: Answer the questions on the basis of the information given below.

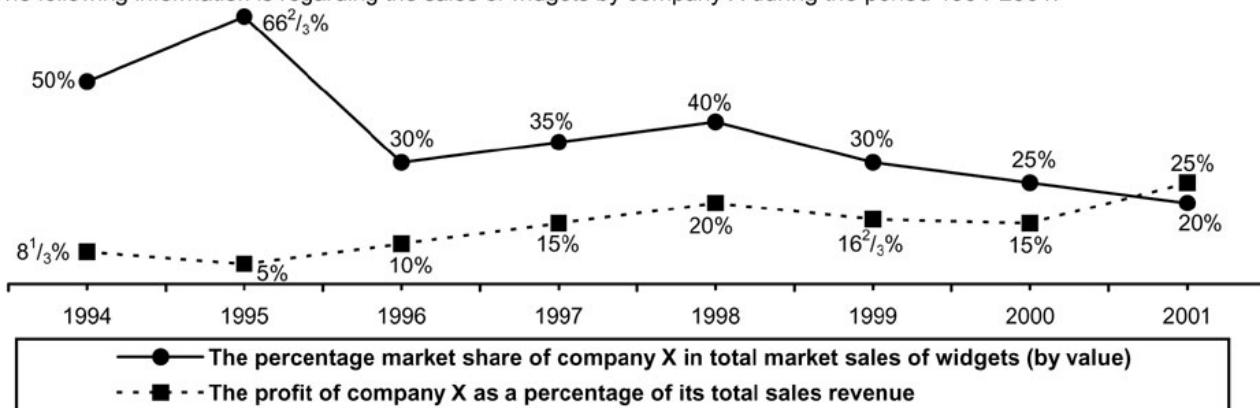
Each of the three men – Gabbar, Shakaal and Mogambo – got married to a different woman amongst Basanthi, Mehbooba and Dhanno, not necessarily in that order. Each couple has exactly one son. The names of the three boys are Bachhu, Chaanta and Tapor. It is also known that,

- the first one to get married among the men was Gabbar, who got married in February, 2000.
- Basanthi got married exactly 6 months after Dhanno got married.
- Tapor is the youngest boy.
- Bachhu was born exactly 16 months after his parents' marriage, but was not born to Basanthi.
- the last man to get married was Mogambo, who got married in September, 2000, and was blessed with a son after exactly 16 months of marriage.
- Mehbooba gave birth to a boy exactly 2 years after her marriage.
- Chaanta was born in January, 2002.
- no boy was born within one year of his parents' marriage, and definitely not in any month between August and December, including both these months.

54. Which of the following groups forms a family?
 (1) Gabbar, Mehboba, Tapor
 (2) Shaakal, Dhanno, Chaanta
 (3) Shaakal, Mehboba, Bachhu
 (4) Mogambo, Dhanno, Tapor
55. Bachhu was born in
 (1) June, 2001. (2) July, 2001.
 (3) February, 2002. (4) January, 2002.
- DIRECTIONS for questions 56 and 57:** The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the statements are sufficient to answer the question and choose the appropriate option among the given choices.
- (1) The question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
 (2) The question can be answered by using either statement alone.
 (3) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

DIRECTIONS for questions 58 to 60: Answer the questions on the basis of the information given below.

The following information is regarding the sales of widgets by company X during the period 1994-2001:



Year	Total market sales of widgets (in Rs. thousands)	Average selling price per widget of company X (in Rs.)
1994	5,860	5
1995	6,600	4
1996	8,500	8
1997	10,500	9
1998	12,000	12
1999	14,500	15
2000	16,600	20
2001	18,800	20

Note: The company X manufactures and sells only widgets.

58. If the percentage market share by volume of company X in the year 1995 was 50%, then what was the average selling price per widget of all the other companies put together?
 (1) Rs.7 (2) Rs.3 (3) Rs.1.5 (4) Rs.2
59. In how many instances did the profit of company X move in tandem with (i.e., show the same trend of increase or decrease over the previous year as) the sales revenue of the company?
 (1) 4 (2) 5
 (3) 2 (4) Cannot be determined
60. In how many instances did the total sales revenue of company X move in tandem with (i.e., show the same trend of increase or decrease over the previous year as) the value of the total market sales?
 (1) 5 (2) 1 (3) 2 (4) 3

(Key and Solutions for AIMCAT1112-2B)

Key

1. 3	7. 4	13. 4	19. 4	25. 4	31. 1	37. 2	43. 1	49. 1	55. 2
2. 1	8. 3	14. 1	20. 3	26. 3	32. 2	38. 3	44. 2	50. 1	56. 2
3. 1	9. 1	15. 2	21. 3	27. 2	33. 3	39. 1	45. 1	51. 2	57. 3
4. 2	10. 4	16. 3	22. 2	28. 2	34. 3	40. 1	46. 2	52. 2	58. 4
5. 4	11. 1	17. 3	23. 4	29. 3	35. 2	41. 3	47. 3	53. 4	59. 1
6. 2	12. 3	18. 2	24. 4	30. 3	36. 1	42. 4	48. 3	54. 1	60. 4

Solutions

SECTION – I

Solutions for questions 1 and 2:

1. The word 'open' is used inappropriately in choice 3. '..... open fire at the mob' is an incorrect expression. The correction is '..... open fire on the mob'.
Choice (3)
2. The usage of 'head' is inappropriate in choice 1. The expression 'comes to head' is incorrect. The correction is 'comes to a head' which means become suddenly very bad.
Choice (1)

Solutions for questions 3 to 5:

Number of words and Explanatory notes for RC:

Number of words : 606

3. Refer to the fifth and sixth paras, where the author discusses how the import intensity of an economy could affect the benefits that a nation could get from stimulus packages. Statements I, II and IV have been suggested. Encouraging exports (statement III) will not help nations get maximum benefit. Increasing government spending (V) is an absurd suggestion in this context. So, choice (1) is the answer.
Choice (1)
4. Choices (3) and (4) are distortions. Choice (1) is incorrect because governments are not looking for new ideas. They are rediscovering Keynes's ideas. Choice (2) is the answer. Refer to the second and third paras.
Choice (2)
5. Choice (1) incorrectly states that WTO has become irrelevant. The phrase 'silenced the proponents' in choice (3) is a distortion. Silencing suggests that proponents of free trade have been stopped from voicing their views. What the para implies is that their views have become irrelevant in the present scenario. Choice (4) is correct and captures the idea best. Choice (3) is sweeping (proving the proponents wrong is not suggested).
Choice (4)

Solutions for questions 6 to 8:

6. Statement C is erroneous because the verb 'lay' should be in the simple present tense, in keeping with the preceding verb 'crumble'. Hence the correction is ".... visited by John Paul II in 2001 lies abandoned". In statement E 'symbolism' should be followed by to. The correction is '.... prefers symbolism to salvage'. A, B and D are grammatically correct.
Choice (2)

7. Part B is erroneous due to the inappropriate placement of the adverb. The correction is 'he will undoubtedly be told....'. Statement C is incorrect because the word 'advise' which is a verb, is incorrect here. The noun 'advice' is correct. Statements A, D and E are grammatically correct.
Choice (4)
8. Part B is incorrect because the word struggle should be followed by against and not 'on', 'Struggle against terrorism'. Part E is incorrect because the pronoun 'they' does not agree with the antecedent noun 'problem'. The correction is '.... of the problem of terrorism and the responses it necessitates. A, C and D are free from errors.
Choice (3)

Solutions for questions 9 to 11:

Number of words and Explanatory notes for RC:

Number of words : 744

9. The passage refers to cinema as 'The Tenth Muse', and as the 'art form of and for the future' (para 2).
Choice (1)
10. Refer to the first paragraph:
Choice (4)
11. "There are film makers like Tarkovsky and Miklos Jansco who have tried doing literature in film and succeeded" (para 5) shows that (1) is not true.
Choice (1)

Solutions for questions 12 and 13:

12. Cronyism, corruption and secretive policy-making are most likely to create disillusionment (disappointment) or distrust but not despondency. Hence option 2 can be ruled out. The word repugnance (great disgust) is not followed by 'of' hence option 4 can be eliminated. Option 1 can be ruled out because disillusionment is followed by with. Choice 3 is apt.
Choice (3)
13. It is very unlikely that grotesque (absurd, macabre) or bizarre (outlandish) warnings can persuade tobacco users to give up smoking. Hence choices 1 and 2 are illogical. Between choices 3 and 4, the latter is better because 'deter' fits the second blank better than 'exhort' (urge, encourage). Hence choice 4 is the most appropriate.
Choice (4)

Solutions for questions 14 to 16:

Number of words and Explanatory notes for RC:

Number of words : 689

14. Refer to para 5 where the words in quote occur. The sentence that follows begins with 'But' (indicating a contrast) and says '... theory, to be of use, must keep its

- feet on the ground' indicating that the previous sentence is the opposite of this. Choice 2 is ruled out by the negative connotation of the word 'concoct' (devise). Choice (1)
15. Refer to the first sentence of para 8 which backs choice 2. The other options are partially distorted. Choice (2)
16. Choice 3 is negated by the second sentence of para 7 (well-being's diverse elements . . . are . . . measurable).
Choice (3)

Solutions for questions 17 and 18:

17. The first sentence of the para speaks of medicine being a valued career choice in India. The subsequent sentences speak of the impact which various changes have had on medicine. Statement 3 culminates the idea by showing how medicine today appears to be due to the impact of the various changes. Hence choice 3 is the best concluding statement. The remaining sentences which speak about the various changes affecting medicine are a continuation of the same idea expressed in the paragraph but do not conclude the para.
Choice (3)
18. Choices 3 and 4 are digressing and are hence irrelevant. Choice 1 is a repetition of the same idea expressed in the sentence. Choice 2 aptly sums up the paragraph by saying that Zakynthos is a cultural beacon. The para says that Zakynthos has a rich musical tradition and theatrical presence and hence it can be described as a cultural beacon.
Choice (2)

Solutions for questions 19 and 20:

19. The opening sentence express the idea that the life-blood of existence is mechanical. The physical laws and the chemical elements are the reality. Statement C follows A as it contradicts what is stated in A. It ends with a note that these laws are not able to explain the purpose that is seen in Nature. What is the purpose? Statement B explains it. It is the freedom and creativity that is manifest in evolution. Hence B follows C. D begins with 'In all this process' which is a reference to the synthesizing of atoms into molecules, molecules into cells etc., mentioned towards the end of E. Hence D follows E. The proper sequence would therefore be CBED.
Choice (4)
20. Statement A speaks about moral principles regarding social relations – establishing and maintaining them. But this leads to some basic queries. There are different principles offered by different cultures, as stated in E. These principles are as diverse as they can be, an idea given in C. Hence E follows A and C follows E. How are they diverse? Statement B gives the answer. For every argument for a principle, there arises a counter argument too (i.e.,) for every particular value, you can have an equally persuasive 'competing value'. Hence B follows C and D concludes saying that this very nature of disagreement may seem 'irresolvable' as they appear to be nothing but personal expressions. Hence ECBG.
Choice (3)

Difficulty level wise summary - Section I	
Level of Difficulty	Questions
Very Easy	-
Easy	2
Medium	1, 4, 5, 7, 8, 10, 11, 12, 13, 14, 16, 17
Difficult	3, 6, 9, 15, 18, 19, 20
Very Difficult	-

SECTION – II

Solutions for questions 21 to 40:

21. In 8 hours, X covers $5 + 5.5 + 6 + 6.5 + 7 + 7.5 + 8 + 8.5 = (8/2) [5 + 8.5] = 54$ km, while Y covers 72 km. Hence Y covers 18 km more than X. Hence choice (2) is false. In 10

hours X covers $54 + 9 + 9.5 = 72.5$ km, while Y covers 90 km. Hence Y covers 17.5 km more than X. In 12 hours X covers $\frac{12}{5} (5 + 10.5) = 93$ km where as Y covers $12(9) = 108$ km. As the total distance covered by them = $(93 + 108)$ km i.e., the distance between A and B, therefore they will meet each other after 12 hours.
Choice (3)

22. Let the time taken to complete the work when all the three work together be t days. Hence Amar, Akbar and Anthony take $t + 20$, $t + 8$ and $2t$ days respectively to complete the work.

Hence $\frac{1}{t} = \frac{1}{t+20} + \frac{1}{t+8} + \frac{1}{2t}$ Going by options, the above equation is satisfied when t is 4.
Choice (2)

23. $a^n - b^n$ is divisible by $(a - b)$ whether n is even or odd, and is divisible by $(a + b)$ when n is even.
 $a^{6R} - b^{6R} = (a^{3R})^2 - (b^{3R})^2 = (a^{3R} - b^{3R})(a^{3R} + b^{3R})$
Now $a^{3R} - b^{3R} = (a^3)^R - (b^3)^R$ will always be divisible by $a^3 - b^3$. Again $a^{3R} + b^{3R} = (a^3)^R + (b^3)^R$ will always be divisible by $a^3 + b^3$ as R is odd.
 $5^{6R} - 3^{6R} = \{(5^3)^R - (3^3)^R\} \{(5^3)^R + (3^3)^R\}$ will always be divisible by $(125 - 27)(125 + 27)$
Thus, it will always be divisible by $(98)(152) = (2^4)(7^2)(19)$
Therefore $56^R - 36^R$ will always be divisible by 16, 133 as well as by $931 = (19)(7^2)$.
Choice (4)

24. Since the ratio of their common difference is $4 : 9$, $d : D = 4 : 9$

$$\begin{aligned} \frac{s_{25}}{S_{25}} &= \frac{\frac{n}{2}[2a + (n-1)d]}{\frac{n}{2}[2A + (n-1)D]} \\ \frac{s_{25}}{S_{25}} &= \frac{[2a + (n-1)d]}{[2A + (n-1)D]} = \frac{4}{9} \\ \Rightarrow \frac{a}{A} &= \frac{4}{9} \end{aligned}$$

So, the ratio of all the corresponding terms of the two series is $4 : 9$.
Choice (4)

25. In an equilateral Δ^{le} with side 'a', inradius $r = \frac{a}{2\sqrt{3}}$ and

$$\text{circumradius, } R = \frac{a}{\sqrt{3}}.$$

$\therefore R : r = 2 : 1$. In this question, since the same circle is an incircle $R = \frac{Q}{\sqrt{3}}$, for Δ^{le} MNL and circumcircle for ΔXYZ , ratio of their sides is $2 : 1$.
 \therefore Areas of ΔXYZ and ΔMNL are in the ratio $1 : 4$.

Choice (4)

26. The number of cubes in the nth layer is $\Sigma d = n(n+1)/2$
The total number of cubes in the top n layers is,

$$\begin{aligned} S_n &= \sum_{i=1}^n \frac{i(i+1)}{2} = \frac{1}{2} \sum_{i=1}^n i^2 + \frac{1}{2} \sum_{i=1}^n i \\ &= \frac{1}{2} \frac{n(n+1)(2n+1)}{6} + \frac{1}{4} n(n+1) \\ &= \frac{n(n+1)(2n+4)}{12} = \frac{n(n+1)(n+2)}{6} = \frac{n^3}{6} \text{ for large values of } n. \end{aligned}$$

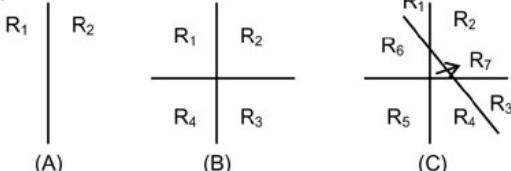
Setting $n^3/6 \equiv 2626$, $n \equiv \sqrt[3]{15756}$

$$n = 24 \Rightarrow s_n = (24)(25)(26)/6 = 2600$$

$$n = 25 \Rightarrow s_n = (25)(26)(27)/6 = 2925$$

\therefore We can form 24 complete layers and 26 cubes remain after that.
Choice (3)

27.



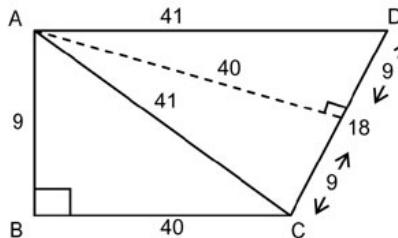
When no lines are drawn in a plane, there will be only one region. When one line is drawn in the plane, there will be two regions into which the line divides the plane i.e. one extra region in the plane. When the two lines are drawn in the plane such that they are non-parallel, there will be four regions into which the lines divide the plane i.e. the second line added produces two extra regions. Hence when the n^{th} line is drawn, n extra regions are formed. As originally one region exists, totally $\Sigma n + 1$ regions will be formed.
Thus we have a total of $\Sigma 20 + 1 = 211$ regions formed when 20 lines are drawn.
Choice (2)

28. In a square, the diagonals perpendicularly bisect each other. As the diagonals are coinciding with the two axes of x and y , all the four vertices lie on the four segments of the axes.

Side AB is represented by the equation $x + y + 5 = 0$. CD is the side opposite to AB and so AB is parallel to CD. The equation of the two lines parallel to each other differ only in the independent term. The equation $x + y + 5 = 0$ can be written as $x/-5 + y/-5 = 1$; i.e. the line has intercepts of -5 and -5 on the x -axis and the y -axis respectively.

As all the four vertices are equidistant from the point of intersection of the diagonals, the other two vertices must be at distances of 5 and 5 from the point of intersection of the diagonals (i.e., the origin) hence the equation of the side parallel to AB (i.e. CD) will be $x/5 + y/5 = 1$; or $x + y - 5 = 0$.
Choice (2)

29. Let the quadrilateral be ABCD with $AB = 9$, $BC = 40$



The above figure is not drawn to scale

$$\text{Area of triangle } ABC = \frac{1}{2} (9)(40) = 180 \text{ cm}^2$$

$$AC = \sqrt{AB^2 + BC^2} = \sqrt{9^2 + 40^2} = 41 \text{ cm}$$

Using Hero's formula, area of the triangle ACD = $\sqrt{S(S - 41)(S - 41)(S - 18)}$

$$\text{Where } S = \frac{41 + 41 + 18}{2} = 50$$

Hence area of triangle ACD = 360 cm^2 .

Area of the quadrilateral ABCD = area of triangle ACD + area of triangle ABC = $360 + 180 = 540 \text{ cm}^2$.

Alternative solution:

$\Delta^{\text{le}} \text{ ADC}$ is isosceles with altitude 40 and base 18.

$$\therefore \text{Area of } \Delta^{\text{le}} \text{ ADC} = \frac{1}{2} \times 18 \times 40 = 360 \text{ cm}^2 \text{ and the area of } \Delta^{\text{le}}$$

$$ABC = \frac{1}{2} (9)(40) = 180 \text{ cm}^2$$

$$\therefore \text{Area of quadrilateral is } 540 \text{ cm}^2. \quad \text{Choice (3)}$$

30. Given, $-5 \leq x \leq 4$; $5 \leq y \leq 12$.

By trial and error, we can find the minimum values of the expression as follows:

$$(1) x^3y - xy^2 = xy[x^2 - y]$$

$$\text{The minimum value} = -5 \times 12[(-5)^2 - 12] = -780$$

$$(2) x^2y + xy^2 = xy[x + y]$$

$$\text{The minimum value} = -5 \times 12[-5 + 12] = -420$$

$$(3) \text{Similarly, the minimum value of } x^3y - xy^3 \text{ i.e.,}$$

$$xy[x^2 - y^2] = 4 \times 12[16 - 144] = -6144$$

$$(4) xy^2 + x^3y = xy[x^2 + y]$$

$$\text{The minimum value} = -5(12)[(-5)^2 + 12] = -2220$$

\therefore The minimum value of the expression in choice (3) is the least.

Choice (3)

31. Let the number of students in the new group be n then their average = $221/n$

and initial class strength = 2n

$$'a' \text{ be the old average} \Rightarrow \text{New average} = a - 1$$

$$221/n$$

$$\begin{matrix} a \\ \swarrow \\ (a-1) \end{matrix}$$

$$1 : (a-1) - 221/n$$

$$\therefore n : 2n :: 1 : (A - 221/n) \quad (A = a - 1)$$

$$\Rightarrow \frac{1}{2} = 1/(A - 221/n)$$

$$\Rightarrow A - 221/n = 2 \quad \dots(1)$$

$$100 > 2n > 30$$

$$\Rightarrow 50 > n > 15 \quad \dots(2)$$

If the new average of the class is an integral number then for (1) n can have only values of 13 or 17 but according to (2) only 17 is possible. $\therefore A = 15$

Alternative solution:

Let initial strength of the class = $2k$.

After the new group joins, strength of the class = $3k$

Let the initial average of the class = A

$$\therefore \text{New average} = A - 1 = \frac{(2k)A + 221}{3k}$$

$$\Rightarrow k(A - 3) = 221 = 17 \times 13$$

$$\therefore 2k > 30$$

$$k > 15$$

$$\therefore k = 17$$

$$\Rightarrow A = 16 \therefore A - 1 = 15 \text{ years}$$

Choice (1)

32. $f_1(1) = 0$

$$f_2(1) = f_1(1) - 1 = -1 \text{ (since } n = 1\text{)}$$

$$f_3(1) = f_2(1) - 1 = -2 \text{ (since } n = 2\text{)}$$

$$f_4(1) = f_3(1) - 1 = -3 \text{ (since } n = 3\text{)}$$

$$f_5(1) = f_4(1) + 1 = -2 \text{ (since } n = 4 \text{ i.e., a multiple of 4)}$$

$$f_6(1) = f_5(1) - 1 = -3$$

$$f_7(1) = f_6(1) - 1 = -4$$

$$f_8(1) = f_7(1) - 1 = -5$$

$$f_9(1) = f_8(1) + 1 = -4 \text{ (since } n = 8 \text{ i.e., a multiple of 4)}$$

By the same pattern, $f_{4k+1} = -2k$

$$f_{41}(1) = -20 \Rightarrow f_{42}(1) = f_{41}(1) - 1 = -21$$

Choice (2)

33. Given CA = 45 cm and CB = 60 cm

$$\text{By pythagoras theorem, } AB = \sqrt{(CA)^2 + (CB)^2} = 75 \text{ cm.}$$

$$\text{Again, } \frac{1}{2} (AB)(CD) = 1350 \Rightarrow CD = 36 \text{ cm}$$

Let the inradius of a circle with centre E be r .

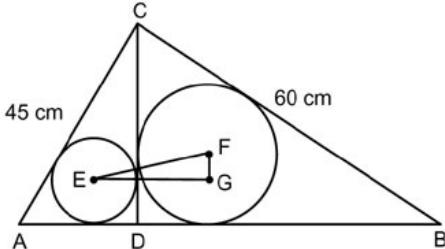
$$\text{Now, in triangle CAD, } AD = \sqrt{(CD)^2 - (CA)^2} = 27 \text{ cm}$$

Hence, the area of triangle CAD = (inradius r) \times (the semi perimeter of triangle CAD)

$$\frac{1}{2}(CD)(AD) = r \frac{(CA + AD + CD)}{2}$$

$$\Rightarrow r = \frac{(36)(27)}{45 + 27 + 36} = \frac{(36)(27)}{108} = 9 \text{ cm}$$

Using a similar procedure, the inradius of a circle with centre F can be calculated as 12 cm.



$$\text{Hence } (EF)^2 = (EG)^2 + (GF)^2$$

$$TU = \sqrt{(12+9)^2 + (12-9)^2} = 15\sqrt{2} \text{ cm.}$$

Choice (3)

34. The product of the roots of $x^2 - (\alpha + 8)x + (\alpha + 1/\alpha) = 0$ is $(\alpha + 1/\alpha)$

As 5 is one root, considering the 4 options, the product of the roots would be 15/2, 10, 30 and 15.

As the product is 9($\alpha + 1/\alpha$), where α is some positive real number, it has to be at least 9(2) i.e., 18. Of the given choices, only 6 is possible. \therefore Product of roots = $5 \times 6 = 30 = 9(\alpha + 1)$

$$\Rightarrow \alpha = 3 \text{ or } \frac{1}{3}. \text{ For the equation to have real roots, } \Delta \geq 0$$

$$\Rightarrow (\alpha + 8)^2 - 36\left(\alpha + \frac{1}{\alpha}\right) \geq 0$$

For $\alpha = 3, \Delta > 0$

\therefore 6 is the only other root satisfying all the conditions.

Choice (3)

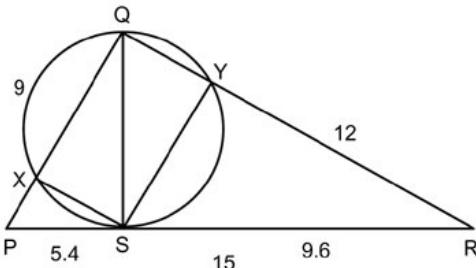
35. Speed of train A = 9 (speed of train B).

Hence time taken by train A to reach station Q is $\frac{1}{9}$ of the time taken by train B to reach station P. Hence train A and train B take 6 minutes and 54 minutes to travel from station P to station Q and vice versa respectively. Due to the delay in the start to train A, it starts only at 9:30 a.m. It will reach

station Q after $\frac{6}{2} = 3$ minutes as it doubles its speed i.e. at 9:33 a.m. Hence train B must be able to travel to station P in the remaining 27 minutes. For this to happen, it must also double its speed. Hence ratio of the speeds of A and B = $27 : 3 = 9 : 1$.

Choice (2)

- 36.



In $\triangle PQR$, with $\angle Q = 90^\circ$, the projection of PQ into the hypotenuse PR (i.e., PS) is given by $\frac{PQ^2}{PR} = \frac{9^2}{15} = 5.4$

$$\text{Similarly } RS = \frac{PQ^2}{PR} = \frac{12^2}{15} = 9.6$$

$$\therefore PX = \frac{PS^2}{PQ} = \frac{(5.4)^2}{9} = 3.24 \text{ and } RY = \frac{RS^2}{RQ} = \frac{(9.6)^2}{12} = 7.68$$

$$\therefore QX = 9 - 3.24 = 5.76 \text{ and } QY = 12 - 7.68 = 4.32.$$

Thus $QX : QY = 4 : 3$

Choice (1)

37. The data and calculation are tabulated below.

b	c	a	c
60	54	64	54
57	57	57	57
3	3	3	7

$$\therefore a : b : c = 3 : 7 : 7$$

Therefore the average score of the students in all the three classes

$$= \frac{3}{17}(64) + \frac{7}{17}(60) + \frac{7}{17}(54) = 58 \frac{4}{17} \text{ marks}$$

$$\text{Average of A, B, C} = 58 \frac{4}{17} \text{ marks.}$$

Choice (2)

38. $|x + 5| = |x - 1| + |x + 3|$

To solve this we need to take the different range of values for x on the number line.

$$(i) \quad x < -5$$

$$\Rightarrow -x - 5 = 1 - x - x - 3$$

$$\Rightarrow x = 3 \text{ [But } x < -5 \text{ (assumption)]}$$

Hence not valid

$$(ii) \quad -5 \leq x < -3$$

$$\Rightarrow x + 5 = 1 - x - x - 3$$

$$\Rightarrow x = -7/3 \text{ [But } x < -3 \text{ (assumption)]}$$

Hence not valid.

$$(iii) \quad -3 \leq x < 1$$

$$\Rightarrow x + 5 = 1 - x + x + 3$$

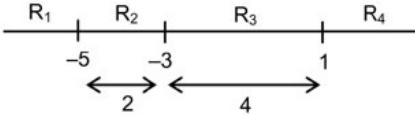
$$\Rightarrow x = -1 \text{ (valid)}$$

$$(iv) \quad x \geq 1$$

$$\Rightarrow x + 5 = x - 1 + x + 3$$

$$\Rightarrow x = 3 \text{ (valid)}$$

Alternative solution:



$|x - a|$ can be interpreted as the distance of x from a . Here, we need to find points whose sum of distances from -3 and 1 equals distance from -5 . In R_1 , distance of any point from -5 is less than that from -3 .

No such point exists. Similarly, in R_2 , distance of any point from -5 can be at most 2, which is less than distance from 1.

No values of x exist in R_2 .

In R_3 and R_4 , there will exist one point each satisfying the given conditions.

Choice (3)

39. The function f is the smaller of the two functions $g(x) = 4 - 3x$ and $h(x) = x^2$

$$\text{At } x = 0, \text{ and } g = 4 \text{ and } h = 0$$

As x increases, g decreases and h increases.

As x decreases, g increases and h also increases and the increase of h is faster.

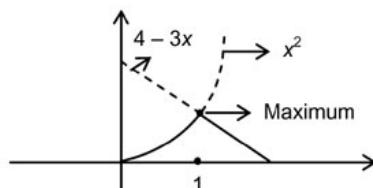
Therefore, around $x = 0$, f is given by h and beyond the critical value (given by $g = h$) f is given by g .

Thus f attains its maximum value at the critical values of x .

The critical values of x are given by $g(x) = h(x)$

$$\Rightarrow 4 - 3x = x^2 \Rightarrow x^2 + 3x - 4 = 0 \Rightarrow x = -4 \text{ or } 1.$$

But only $x = 1$ is permissible, because $x \geq 0$ given.



As $x = 1$, $f(x) = g(x) = h(x) = 1$

The maximum value of $f(x)$ is 1 and it occurs at $x = 1$

Choice (1)

40. Let us take an example
 $I = 3, J = 4, L = 2$ and $K = 5$.
Hence we have these set of values satisfying $I^L + J^L = K^L$.
Hence, as $L = 2 < \min(I = 3, J = 4$ and $K = 5)$
Choice (1) follows.

Alternative solution:

Fermat's last theorem states that if 4 natural numbers I, J, K, L satisfy the relation $I^L + J^L = K^L$, then L can have a minimum value of 1.

Consider

$$I = 1, J = 2, K = 3, L = 1$$

$$\therefore I^L + J^L = K^L. \text{ Here } L \text{ is equal to } \min(I, J, K)$$

Consider

$$I = 3, J = 4, K = 5, L = 2, I^L + J^L = K^L$$

Here L is less than $\min(I, J, K)$

$\therefore L$ is always less than or equal to the min value of (I, J, K) .

Choice (1)

Difficulty level wise summary - Section II	
Level of Difficulty	Questions
Very Easy	-
Easy	24
Medium	21, 22, 25, 28, 29, 32, 34, 37, 39
Difficult	23, 26, 27, 30, 31, 35, 36, 38, 40
Very Difficult	33

SECTION – III

Solutions for questions 41 to 43:

41. Percentage of people above PL in 1970-71 = 48%

\therefore Number of people above PL in 1970-71

$$= 100X \times \frac{48}{100} = 48X$$

\therefore Number of people above PL living in villages in 1970-71

$$= 48X \times \frac{25}{100} = 12X$$

\therefore Similarly, the number of people below PL living villages in

$$1970-71 \text{ is } = 100X \times \frac{52}{100} \times \frac{60}{100} = 31.2X$$

$$\therefore \text{Total number of people living in villages in 1970-71} \\ = 12X + 31.2X = 43.2X \quad \text{Choice (3)}$$

42. Population in 1951-52 = 100 lacs

Population in 1959-60 = 180 lacs (Increase of 10 lacs / yr)
Number of people above Poverty line in 1951-52

$$= 100 \times \frac{55}{100} = 55 \text{ lacs}$$

Number of people above Poverty line (PL) in 1959-60

$$= 180 \times \frac{50}{100} = 90 \text{ lacs}$$

Percentage increase in people above Poverty line from

$$1951-52 \text{ to } 1959-60 = \frac{35}{55} \times 100 = 63\% \quad \text{Choice (4)}$$

43. Let us assume that the population is $100X$

Number of people below PL in 1951-52

$$= 100X \times \frac{45}{100} = 45X$$

$$\text{Central sector is } = \frac{108}{360} \times 100 = 30\%$$

\therefore Number of people below PL in Central sector in 1951-52

$$= 45X \times \frac{30}{100} = 13.5X$$

Similarly, number of people below PL in Southern sector in 1966-67 (since Southern sector is 54° it corresponds to

$$15\%) = 100X \times \frac{62}{100} \times \frac{15}{100} = 9.3X$$

\therefore The Central sector is more than the Southern sector by

$$= \frac{4.2X}{9.3X} \times 100 = 45\%$$

Choice (1)

Solutions for questions 44 and 45:

44. Given largest number is 10 and the smallest is 3. From statement I we have out of the remaining four numbers there are 2 prime numbers and the sum of all the numbers is a prime.

\therefore Remaining two primes are 5 and 7

Sum of the known four numbers is $3 + 5 + 7 + 10 = 25$.

Remaining two number can be 4, 6, 8 or 9.

If we take one of the number as 9, sum becomes even.

(which is not prime)

\therefore the remaining number can be (4, 6) (6, 8) or (4, 8)

Out of these only for (4, 8) sum of six numbers is

$$(25 + 12 = 37) \text{ Prime.}$$

\therefore Statement I alone is sufficient to find their average.

From statement II, we have sum of the six numbers is 10 more than a perfect square.

As already sum of two given numbers is 13 and all the numbers are distinct lying between 3 and 10, the two possible perfect squares we can consider are 25 and 36.

\therefore The possible sums are 35 or 46.

\therefore Sum of remaining four numbers are 22 ($35 - 13$) or 33 ($46 - 13$).

If we consider 4, 5, 6 and 7 as the remaining numbers their sum is equal to 22.

Even if we consider the greatest 4 possible numbers i.e. 6, 7, 8 and 9, their sum is less than 33.

\therefore Only 3, 4, 5, 6, 7 and 10 is the possibility.

\therefore Statement II alone is sufficient. Choice (2)

45. Let the numbers be $12x, 12y, 12z$

Then $1728xyz = 17280$

$\therefore xyz = 10 \therefore x, y, z$ could be 1, 2, 5 or 1, 1, 10

From statement I, both cases are possible but from statement II only 1, 2, 5 is possible. So the numbers are 12, 24, 60. Choice (1)

Solutions for questions 46 and 47:

The following table shows profit per unit of P, Q, R and S.

Name of the soap	Per unit		
	Selling price (a)	Cost price (b)	Profit (c) = (a) – (b)
P	13	7	6
Q	9	5	4
R	12	7	5
S	15	8	7

The following table shows the number of units that can be sold by each of the salesmen, product-wise.

Name of the Salesman	('000 units)			
	Name of the product			
	P	Q	R	S
A	5	4	3	2
B	2	3	4	5
C	11	12	14	13
D	13	11	14	12

46. D must be given product P to sell.

Choice (2)

47. A sells Q

\Rightarrow Profit is $4,000 \times \text{Rs.}4 = 16,000/-$

B sells R

\Rightarrow Profit is $4,000 \times \text{Rs.}5 = 20,000$

Profit from A and B

$$36,000$$

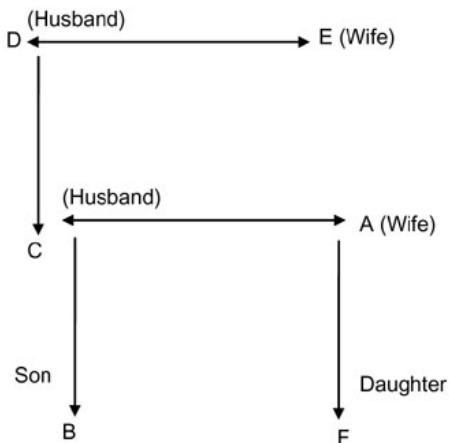
C and D should sell P and S.

If C sells P and D sells S.

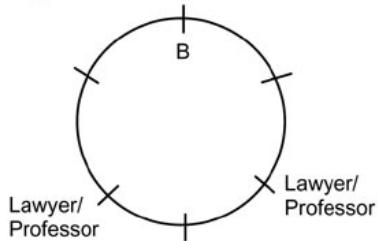
Profit is $[11,000 \times 6 + 12,000 \times 7]$ Rs.1,50,000
 ⇒ Total profit is Rs.1,86,000/-
 If C sells S and D sells P.
 Profit is $[13,000 \times 7 + 13,000 \times 6]$ Rs.1,69,000
 ⇒ Total profit is Rs.2,05,000
 Choice (3)

Solution for question 48:

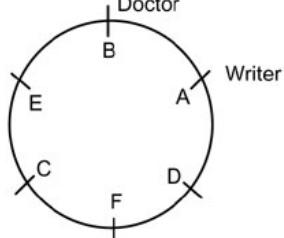
From statement (1) and (2) we get



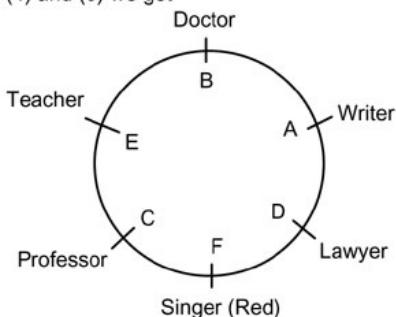
From (3), we get



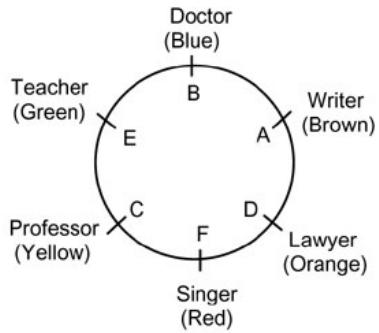
From (5) we get



From (3), (4) and (5) we get



As F is neither the Teacher, nor the Professor or the Lawyer. Hence F is the Singer. D is not a Professor, hence D is the Lawyer, C is the Professor and E is the Teacher.
 From (6), we get C is Professor who sits in the Yellow chair and A, the writer sits in the Brown Chair.
 From (7) we get E, the Teacher sits in the Green chair, B, the Doctor sits in the Blue chair and D, the lawyer sits in the Orange chair. Hence the final arrangement is as follows.



48. B's father is C, who is a Professor and sits in the Yellow chair.
 Choice (3)

Solution for question 49:

49. The required percentage is given by $(82 + 78 + 76 + 72) - 300 = 8\%$
 Choice (1)

Solutions for questions 50 to 52:

50. Clearly the market value of unilever is not in tandem with GM market value, hence Choice (1) is false.
 Peak value of unilever is 330 as against peak value of GM which is 400. The percentage is more than 80%. Hence choice (2) is also false.

The percentage decrease in unilever from 12th Dec to 20th Dec $\Rightarrow \frac{80}{330} = \frac{8}{33} \times 100 = < 25\%$

The percentage decrease of GM from 27th Nov to 20th Dec is $\frac{100}{400} = 25\%$

Unilever scrip's decrease is less than GM's decrease.
 Hence choice (1) is true.
 Choice (1)

51. Difference in the holding of GM and MF/Banks = 4%
 4% of holding = 250 Mn \$

$$\therefore 100\% \text{ of holding} = \frac{250 \times 100}{4} = 6250 \text{ Mn}$$

Value of 1 United Lever share on 20th December 2003 = 250
 \therefore Total shares of United Lever on 20th December 2003 = $\frac{6250 \text{ Mn}}{250 \text{ $}} = 25 \text{ Mn}$

$$\text{Number of shares held by others} = \frac{25 \times 14}{100} = 3.5 \text{ Mn}$$

Choice (2)

52. Difference in GDR and FII on 15th Dec 2003 is 17.84 Mn. dollars which represents 2% of United Lever's total share value. $\Rightarrow 1\% = \$8.92 \text{ MN}$

$$\therefore 42\% \text{ of United Lever on 15th Dec 2003} = 892 \times 42 = \$374.64 \text{ Mn}$$

Now the share prices on 10th Dec 2003 and 15th Dec 2003 were \$320 and \$300 respectively.

Hence GM's holding of United Lever on 10th Dec 2003 = $374.64 \times \frac{320}{300} = \399.62 Mn.

Hence required percentage increase

$$= \left(\frac{399.62}{124.88} - 1 \right) \times 100\% = 220\% \quad \text{Choice (2)}$$

Solution for question 53:

53. The two statements of (say) Aishwarya can be either True and False or False and True respectively.

Assuming the order as say True and False (In that order) we get

P → 2nd R (R → runner-up)

S × 1st R.

→ from Sushmita's statements (and the earlier information)

$A \times 2^{\text{nd}}$ R.
 $P \rightarrow 1^{\text{st}}$ R.
 Which is Inconsistent.

Hence we try the only other possibility that Aishwaryas statements are False and True (In that order)
 We get
 $P \times 2^{\text{nd}}$ R.
 $S \rightarrow 1^{\text{st}}$ R.

From Sushmitas statements:

$A \rightarrow 2^{\text{nd}}$ R.

$P \times 1^{\text{st}}$ R.

From Lara's statements:

$S \rightarrow 1^{\text{st}}$ R.

$A \times 3^{\text{rd}}$ R.

From Priyanka's statements:

$P \rightarrow 3^{\text{rd}}$ R.

$L \times 1^{\text{st}}$ R.

$\therefore L \rightarrow \text{Winner.}$

Choice (4)

Solutions for questions 54 and 55:

We have the following data:

- (a) The first to marry was Gabbar, who got married in Feb, 2000.
- (b) Basanthi got married 6 months after Dhanno got married.
- (c) Taporis the youngest.
- (d) Bachhu was born after 16 months of his parents' marriage, but not to Basanthi.
- (e) Mogambo was the last man to get married, (in Sept, 2000) and was blessed with a son after 16 months of marriage.
- (f) Mehbooba gave birth to a child after 2 years of marriage.
- (g) Chaanta was born in January, 2002
- (h) No boy was born within one year of his parents' marriage or between Aug and Dec, (both included).

From the given information, we get the following initial arrangement:

Husband	Wife	Married	Child	Born on
1. Gabbar	X Basanthi (from (a) and (b))	Feb, 2000 (a)		
2. Shakaal				
3. Mogambo	X Mehbooba	Sept, 2000	Chaanta (g) and (e)	Jan, 2000 (e)

Now Basanthi could have got married in Aug 2000, which is six months from Feb, 2000. But 16 months from Aug is Dec and 2 years from Aug is Aug. that is when her son would be born, but this violates condition (h). Hence, Basanthi must have married in Sept, 2000, i.e., 6 months from Mar, 2000 in which Shakaal got married to Dhanno. Hence, Mehbooba got married to Gabbar and gave birth to a child after 2 years, who is also the youngest i.e., Taporis then, Bachhu must have been born to Shakaal & Dhanno after 16 months of their marriage i.e., in July, 2001.

Hence, the final arrangement is as given below:

Husband	Wife	Married in	Child	Born In
1. Gabbar	Mehbooba	Feb, 2000	Taporis	Feb, 2002
2. Shakaal	Dhanno	Mar, 2000	Bachhu	July, 2001
3. Mogambo	Basanthi	Sept, 2000	Chaanta	Jan, 2002

54. Choice (1)

55. Choice (2)

Solutions for questions 56 and 57:

56. From statement I, $\left(CP - \frac{3SP}{4} \right) = 2(SP - CP)$

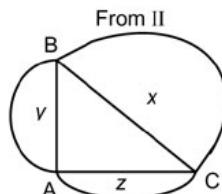
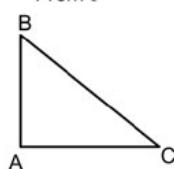
As we can find the ratio of SP and CP, profit percentage can be found.

From statement II, $0.8 SP = 1.2 CP$

As the ratio of SP and CP is given, profit percentage can be found.

Choice (2)

57. From I



Given, sum of areas of semi-circles x , y and z is 100π . If $BC = a$ cm, $AC = b$ cm, $AB = c$ cm.

Area of semi circle x is $\pi/2 a^2/4 \text{ cm}^2$

Area of semi circle y is $\pi/2 c^2/4 \text{ cm}^2$

Area of semi circle zx is $\pi/2 b^2/4 \text{ cm}^2$

$$1/2 \pi/4 (a^2 + b^2 + c^2) = 100\pi$$

$$a^2 + b^2 + c^2 = 400$$

We know that in ΔABC

$$a^2 = b^2 + c^2 \therefore 2(b^2 + c^2) = 800$$

$$b^2 + c^2 = 400$$

$$b^2 + c^2 = a^2 = 400 \Rightarrow a = 20$$

$\Rightarrow b$ or $c = 10\sqrt{3}$ and \Rightarrow the sides are $10, 10\sqrt{3}, 20$

\therefore The perimeter = $30 + 10\sqrt{3}$ cm

Choice (3)

Solutions for questions 58 to 60:

58. Share of 'X' by value = $66^{2/3}\%$ of 6600 = 4400

\Rightarrow Share of "others" = Rs.2,200 thousands.

Now the number of units of widgets sold by

$$X = \frac{4400}{4} = 1100 \text{ thousand units since this is 50\%}$$

\therefore Average selling price of widgets other manufacturers

$$= \frac{2200}{1100} = \text{Rs.2}$$

Choice (4)

59. Calculating total sales revenue and profits.

Year	Sales revenue of X Rs.'000	Profit = profit% x sales revenue
1994	2930	244
1995	4400↑	220↓
1996	2550↓	255↑
1997	3675↑	551↑
1998	4800↑	960↑
1999	4350↓	725↓
2000	4150↓	620↓
2001	3760↓	940↑

Hence in 1997 to 2000 (four years). The sales revenue and profit moved in tandem.

Choice (1)

60. Using the second column from earlier solution we get

Year	Total market sales	Sales revenue of X
1994	5860	2930
1995	6600↑	4400↑
1996	8500↑	2550↓
1997	10200↑	3675↑
1998	12000↑	4800↑
1999	14500↑	4350↓
2000	16600↑	4150↓
2001	18800↑	3760↓

\therefore only in 1995, 1997 and 1998 did the sales revenue of X move in tandem with total market sales of widget.

Choice (4)

Difficulty level wise summary - Section III	
Level of Difficulty	Questions
Very Easy	-
Easy	41, 42, 56
Medium	43, 45, 47, 50, 51, 52, 53, 58
Difficult	44, 46, 49, 54, 55, 57, 59, 60
Very Difficult	48