

## XAT 2006 Question Paper

### SECTION –A

**Directions (Qs. 1 to 6):** Choose the correct alternative.

- Which of the following choices MOST accurately captures the meaning of edifice as used in the sentence below?  
The edifice of ‘public space’, built up through literacy or informative institutions of popular education and on which the pillars of democracy were mounted, is now crumbling.  
[1] Infrastructure            [2] Building            [3] Paraphernalia            [4] None of the above
- The \_\_\_\_ of the Sanskrit Vedic hymns into English is often not possible; what experts do is a \_\_\_\_  
Below there are three words indicated Choose the alternative (among A, B,C, D) that you think has the right combination of words that can be used to fill the gaps in the sentence above and give it a coherent meaning.  
X: Translation            Y: Rendition            Z: Conversion  
[1] X, Z in that order  
[2] Y, X in that order  
[3] X, Y in that order  
[4] Cannot be determined, since the choice depends on the context in which the sentence is used
- The phrase ‘Ranch on the Ganges’:  
[1] Denotes an object  
[2] Qualifies an object  
[3] Alludes to a suggestive meaning  
[4] None of the above
- ‘In this place flowed a river. A town came up by its banks sometime. And today there is a concrete road of the metropolitan city. When I bend down and place my ears on the road, I can still hear the splashing of the water flowing underneath.’ The passage above is:  
[1] Literal            [2] Discursive            [3] Descriptive            [4] None of the above

**Directions (Qs. 5 & 6):** ‘When I become aware of the pain in my injured leg, it begins to hurt and the pain becomes so excruciating that I often loose control over my senses.’

- In the above passage. ‘excruciating’ refers to:  
[1] Suddenness of the pain            [2] Objectivity of the pain  
[3] Longevity of the pain            [4] None of the above
- Which of the following words can possibly replace ‘excruciating’ without CHANGING the underlying meaning?  
[1] Dominating            [2] Massive            [3] Overwhelming            [4] Irritating

**Directions (Qs. 7 to 9):** In each of the following questions, choose the correct order of statements (A, B, C...) to give a coherent meaning to the text?

- Statement A:** Such inter-operability of a software service or product appears to be only one aspect, and the interoperable system as itself evolving.  
**Statement B:** Each software product introduces a variation and consequently a change in the system.  
**Statement C:** An operating system must work with applications and other elements in a hardware platform

- Statement D:** A software firm while introducing its product or service, therefore, does not strive for mute complementarities alone but tries to bring about a change in the existing structure.
- Statement E:** In other words the components must be designed to be inter-operable.  
 [1] BCDAE                      [2] CEABD                      [3] DAEB C                      [4] CBEAD
8. **Statement A:** Moreover, as argued above, knowledge is entailed not by way of justification as such but by the realization of good or fruit leadeness of meaning and actions or iterated actions.
- Statement B:** Knowledge is required in order to resolve doubts and thus in order to act meaningfully.
- Statement C:** Therefore the actions in a commonly led daily life are both meaningful and knowledge-driven.
- Statement D:** Indian theorists argue for a common knowledge. which, is obtained through iterated fruitful actions, through the authority of sentences (or words).
- Statement E:** We argue for four sources of validation of knowledge, viz, sentence, inference, direct perception and analogy.  
 [1] AECBD                      [2] BAECD                      [3] BDCEA                      [4] EADCB
9. **Statement A:** But PST has also used satellite pictures to suggest that an ancient fortified town had existed 30 Km from Junagadh.
- Statement B:** Soil and vegetation patterns were used in the search.
- Statement C:** The site marches the description of Krishna’s town in an ancient scripture.
- Statement D:** PSTs primary job at Space Applications Centre has been – tracking land use and forest cover with satellite images.
- Statement E:** An archeologist however cautioned that remote sensing and scriptures by themselves would not be enough to identify a township.
- Statement F:** It was claimed that soil and vegetation patterns at ancient abandoned sites reveal specific patterns that can be picked by satellite images.  
 [1] DACBEF                      [2] DACBFE                      [3] FDCABE                      [4] FDACBE

**Directions (Qs. 10 to 13):** Analyze the following statements and give an appropriate answer for the following questions.

10. “If the forest continues to disappear at its present pace, the Royal Bengal tiger will approach extinction,” said the biologist.  
 “So all that is needed to save the tiger is to stop deforestation,” said the politician.  
 Which one of the following statements is consistent with the biologists claim but not with the politician’s claim?  
 [1] Deforestation continues and the tiger becomes extinct.  
 [2] Deforestation is stopped and the tiger becomes extinct.  
 [3] Reforestation begins and the tiger survives.  
 [4] Deforestation is slowed and the tiger approaches extinction.
11. There is little point in looking to artists for insights into political issues. Most of them hold political views that are less insightful than those of any reasonably well-educated person who is not an artist. Indeed, when taken as a whole, the statements made by artists, including those considered to be great, indicate that artistic talent and political insight are rarely found together.  
 Which one of the following can be inferred from the passage?  
 [1] There are no artists who have insights into political issues.  
 [2] Some artists are no less politically insight than some reasonably well-educated persons who are not artists.  
 [3] Every reasonably well-educated person who is not an artist has more insight into political issues than any artist.  
 [4] Politicians rarely have any artistic talent.

12. All intelligent people are nearsighted. I am very nearsighted. So I must be a genius.  
Which one of the following exhibits both of the logical flaws exhibited in the argument above?
- [1] Iacocca is extremely happy, so he must be extremely tall because all tall people are happy.
  - [2] All chickens have beaks. This bird has a beak. So this bird must be a chicken.
  - [3] All geniuses are very nearsighted. I must be very nearsighted since I am a genius.
  - [4] I must be stupid because all intelligent people are nearsighted and I have perfect eyesight.
13. The district health officer boasts that the average ambulance turnaround time, the time from summons to delivery of the patient, has been reduced this year for, top-priority emergencies. This is a serious misrepresentation. This “reduction” was produced simply by redefining “top priority”. Such emergencies used to include gunshot wounds and electrocutions, the most time-consuming cases. Now they are limited strictly to heart attacks and strokes.  
Which one of the following would strengthen the author’s conclusion that it was the redefinition of “top priority” that produced the reduction in turnaround time?
- [1] The number of heart attacks and strokes declined this year.
  - [2] The health officer redefined the district’s medical priorities this year.
  - [3] One half of all last year’s top-priority emergencies were gunshot wounds and electrocution cases.
  - [4] Other cities include gunshot wound cases in their category of top-priority emergencies.

**Directions (Qs. 14 to 19):** are based on the passage below.

Deliberative democracy demands a reflexive (or reflection driven) reordering of preferences in a non-coercive manner. The authenticity of democracy requires in addition that these reflective preferences, influence collective outcomes and action, and so long as the state is the main (though far from exclusive) locus of collective decisions. It requires discursive mechanisms for transmission of public opinion to the state. A deliberative or more properly a discursive democracy, in order that it can accommodate several competing versions of democracies such as the liberal, the minimal, the difference, etc., must also accommodate rhetoric, narratives, and empathy along with reasoning. A rationality and a reasoning that does not accommodate values is meaningless. However, it is also argued that individual rationality cannot be realized-if values are embedded in the decision procedures, in other words, realization of values could be made possible only when individuals behave non-rationally. Further if values having been abandoned at the individual level are accorded a place only collectively, the same must lead to either “epistemological inconsistency or abandonment of autonomy of individual evaluations”. A talk or a rhetoric, otherwise, is strategic and is employed with the intention of signaling certain information. Such a talk can be therefore deceptive and coercive. The illocutionary force and the normative trappings of a Foucauldian discourse while allowing identification with a community and differences with the others, do simultaneously pose through coercion a threat to an utterance as such. If democracy cannot ensure utterance as freedom and if the illocutionary forces in a discursive democracy disciplines the thought and the talk, then how such a democracy could indeed be called authentic!

Most human actions and discourses are actuated by a deeper or primordial ante-deliberation Desire (let us use a capital ‘D’). Speaking as such is out of such a Desire (one might use volition or passion). Engaging in a deliberation or else in an action is possible only since there has been such a Desire. Desire appears to both the reflection and also to an observer as a mental-state. A discourse can be set only when such mental states are in harmony, or share a common predisposition or attitude. In the absence of such shared mental-states, no discourse and no deliberation can begin. A running underlying and most often unstated theme that remains at the back of the idea of deliberative democracy is competition - a competition with the ‘other’ which introduces strategy. The alternative to competition, a mental-state which is out of a Desire to enjoy the ‘other’ in the light of a memory that this ‘one’ and the ‘other’ were but the same and would again become the same, do not appear in the known Anglo- American literature. Such a mental-state might generate and keep alive possibilities of cooperation although is never a state of cooperation alone as such.

14. Which of the following follows from the passage above?  
 [1] A rhetoric laden talk can generate authentic democratic collective choice  
 [2] Irrational persons alone can have values  
 [3] Authenticity of democracy requires a strong reflection-action interaction  
 [4] A paradigm of competition alone can sustain an authentic democracy
15. Desire as ante-deliberation driving action refer to:  
 [1] Irrationality of deliberation  
 [2] Uselessness of deliberation  
 [3] Desire to act without thinking  
 [4] Temporal inconsistency in a position that argues for deliberative action constituting democracy
16. Which of the following is true from the passage?  
 [1] Author argues that democracy is bound to fail  
 [2] Author argues that Desire is primal  
 [3] Author argues for an, end to primal desire so that an end to competition can come through  
 [4] None of the above
17. A Foucauldian discourse as used in the passage does NOT refer to:  
 [1] Discourse based on power  
 [2] Community based discourse  
 [3] Strategic discourse  
 [4] None of the above
18. Which of the following words is closest to the word ‘primordial’ as used in the passage above?  
 [1] Elemental                      [2] Anarchist                      [3] Animalistic                      [4] Nihilistic
19. Which of the following captures the spirit of the position that the author hints at through the phrase ‘alternative to competition’?  
 [1] All the pragmatic world is a stage - a play unfolding  
 [2] Democracy is an unruly fight among citizens  
 [3] Socialist planning does away with the chaos of competition  
 [4] None of the above

**Directions (Qs. 20 to 22):** are based on the passage below.

In 1980, the US Supreme Court overturned decades of legal precedents that said that naturally occurring phenomenon, such as bacteria, could not be patented because they were discoveries rather than inventions. Ye that year, the Court decided that a biologist named Chakrabarty could patent a hybridized bacterium because ‘his discovery was his handiwork, not that of nature’. A majority of the judges reiterated that a new mineral discovered in the earth or a new plant discovered in the wild is not patentable’. Yet they believed that Chakrabarty had concocted something new using his own ingenuity. Even Chakrabarty was surprised. He had simply cultured different strains of bacteria in the belief that they would exchange genetic material in a laboratory soup. The then embryonic industry used the case to argue that patents should be issued on gene, proteins and other materials of commercial value.

By 1980s, the US Patent Office had embarked on a far-reaching change of policy to propel the US industry forward, routinely issuing patents on products of nature including genes, fragments of genes and human proteins. In 1987, for example, Genetics Institute Inc. was awarded a patent on erythropoietin, a protein of 165 amino acids that stimulates the production of red blood cells. It did not claim to have invented the protein: it had extracted small amounts of the naturally occurring substance from thousands of gallons of urine. Erythropoietin is now a multi-billion dollar-a-year treatment.

The Industry's argument is that innovation prospers only when it is rewarded. Without rewards, innovation will not take place. The barriers to entry into biotechnology are relatively low. Biotechnology companies do not have to build costly factories or high street retail outlets or invest in brand reputations. The basic units of production are bacteria manipulated to deliver therapeutically and commercially valuable substances. Without the protection of a patent, an innovative biotechnology company will find its discoveries quickly copied by later entrant. If the ownership of rights to exploit a genetic discovery were left unclear, there would be less innovation in the economy as a whole and we would all be worse off. The biotechnology industry in USA is larger than anywhere else, in part because innovators there have been allowed to patent their inventions. In 1998, there were almost 1500 patents claiming rights to exploit human gene sequences.

Yet the ownership regime for industries and products spawned by genetics is far from settled. A practical argument is about what should be owned - the gene or the treatment, The cystic fibrosis gene, for example, is patented, and anyone who makes or uses a diagnostic kit that uses knowledge of the gene sequence has to pay royalty to the patent holder. Many would argue that this is too broad a patent, which may be excessively strong and slow down innovation. As we move into the knowledge economy, issues such as the breadth and scope of a patent, the standards of novelty, even the duration, will become more problematical. To put in another way, who should own what and for how long will become more of an issue in a knowledge driven economy. That is because incentives to exploit knowledge need to be set against the value of sharing it. Scientific enquiry proceeds as a result of collaboration the sharing and testing of ideas. We are lucky that James Watson and his collaborator Francis Crick did not work for Genentech or G'axo-Wellcome because every genetic researcher would now be paying a royalty to use their discovery. Genetics, as most sciences, is built on a bedrock of shared knowledge. The more basic the knowledge, the more inappropriate strong property rights and exclusive private ownership becomes. Privatization of knowledge may make it less likely that know-how will be shared. PerkinElmer will publish its research on the human genome, but only once in three months and the company will reserve at least 300 genes for its own patent programme. Publicly funded researchers share their results more openly and more frequently.

20. The erythropoietin episode shows that:
- [1] Patenting is the only way to encourage exploration of new ideas
  - [2] Patenting accelerates exploitation of new ideas
  - [3] Claims to patentability are often false
  - [4] None of the above
21. After reading the passage, which of the following statements do you think captures best, the tenor of the piece?
- [1] The author is unequivocal about undesirability of a patenting system
  - [2] The author explores the complexities in patenting
  - [3] The author deliberately obfuscates issues
  - [4] The passage is boring about
22. Chakrabarty patent issue shows that:
- [1] Patent authorities are infallible
  - [2] Patent systems are adhoc
  - [3] Patenting rationale is socially embedded and evolutionary
  - [4] None of the above

**Directions (Qs. 23 to 29):** are based on the passage below.

Enterprises in the throes of discovery have an aura of magic around them. In the world of software this becomes many-splendoured with a certain joie de vivre, quite distinct from what obtains elsewhere: a sense of wonderment, surprise and eventual delight; a coming within reach of power and profits; possibly through a little tweak in technology with a touch of novelty, opening up vistas that had always seemed so near yet so far. In professional management terms, this waving of the wizard's wand, as it were, is

nothing more than an effective recovery of strategy from a technological paradigm. This book is about exploring the journey from rules and norms to solutions, specific solutions prized out of the announced covers of sector-specifics industrial structures and often resources determined mindsets that Indian software firms seems to have mastered. Originality is the fountainhead of such a strategy. It then progresses into the realms of the economics of innovation to give itself a solid foundation from where it becomes possible to retrieve a new language of strategy and of innovation. In this high- natural yet dynamic world the profit motive, backed by ingenuity, lend support to many of the arguments that evolve in this flow of events. The Indian software experience is a unique demonstration of how this process - the coalescing of the economics of surprise and novelty and the economics of knowledge works. This forms the basics of the strategy theory.

There are several grand theories of even grander traditions: the industrial organization approach, including several kinds of structure-conduct performance assertions and game theoretic models, evolutionary theories and corresponding case studies, resource-based approaches or several intermediate.. variants of competency based ideas that provide us with a rich yet incomplete landscape. This landscape is perhaps oblivious of certain traditions provided by theory; the rich repertoire bequeathed by Marshall and Shackle is a case in point, as they are immensely rewarding. Each important traditions or theory has made global assertions and has proved to be prescriptive or normative. Some authors have looked back at Marshall and a handful at Shackle. Fewer still reconsidered certain rich - traditions of thinking on strategy. This book does not attempt to issue prescriptive or normative guidelines purely because the global canvass is, too large and often beyond the capacity of intelligent comprehension. A strategist acts on a local scale following what Simon has generally observed. Pragmatism emerges as an important guide-and achieving the surprise element is above all the key to definitive strategy. While this strategy evolves from governance, it also influences governance at every stage. Handicapped by a paucity of resources, the strategist must dovetail the two to increase immensely the scope of governance not only over what the incumbent possesses, but also over a much larger group of firms not under its direct control. This need not necessarily be explained by another grand theory with globally prescriptive assertions or powers of predictions. Surprise must stand beyond predictability. 'It must govern to earn windfall profit. Strategy thus cannot be prescribed; it would comprise piecemeal' engineering. This is what this book explains.

23. The locale of the phrase "acting on a local scale" as used in the passage above refers to:
- [1] Cognitively delimited space
  - [2] Geographically delimited space
  - [3] Temporally delimited space
  - [4] None of the above
24. The idea of a 'magic' as used in the passage refers to:
- [1] Irrationality and blind belief
  - [2] A sense of wonder at imagination unbridled by any governance whatsoever
  - [3] A sense of wonder at the discovery of a grand theory
  - [4] None of the above
25. According to the author, the several extant strands of strategy literature such as the Industrial Organization approach provide an incomplete landscape because:
- [1] They fail to take account of contributions of Marshall and Shackle
  - [2] It is normative in nature
  - [3] The vastly rich and unfolding reality is beyond the capacity of human comprehension
  - [4] None of the above
26. Which of the following follows from the passage?
- [1] Indian software firms have excelled in providing specific solutions
  - [2] Indian software firms have been remarkable technology innovators
  - [3] Indian software firms have benefited from low priced manpower, with adequate programming skills
  - [4] None of the above

27. From the passage which would be an adequate characterization of the author?  
 [1] Positivist                      [2] Pragmatist                      [3] Empiricist                      [4] Cynical
28. From its usage in the passage, which is the most appropriate meaning of the word 'wizard'?  
 [1] Conman    [2] A person of wisdom  
 [3] A well known personality                      [4] None of the above
29. From its usage in the passage which is NOT the most appropriate meaning of the word 'ingenuity'?  
 [1] Cunning    [2] Creative    [3] Original    [4] Clever

**Directions (Qs. 30 to 35):** are based on the passage below.

Think back to 1993. That is when the Centre for Disease Control came up against the hantavirus in the South West. The virus made no sense. It had never appeared in landlocked regions before, and it was killing people by attacking their lungs rather than their kidneys, the virus's usual target. It seemed to defy explanation. And that's as close-a parallel to a cosmology episode as I can describe. Basically a cosmology episode happens when people suddenly feel that the universe is no longer a rational, orderly system. What makes such an episode shattering is that people suffer from the event and, at the same time, lose the means to recover from it. In this sense, a cosmology episode is the opposite of a deja vu experience. In moments of deja vu, everything suddenly feels familiar, recognizable. By contrast, in a cosmology episode, everything seems strange. A person feels like he has never been here before, has no idea of where he is, and has no idea who can help him. An inevitable stare of panic ensues, and the individual becomes more and more anxious until he finds it almost impossible to make sense of what is happening to him.

The continual merging and divesting and recombining and changing of responsibilities and bosses over the years has created immense cosmological episodes for business people. Even senior executives are unsure of whom they are working for and why. So I think it is fair to say that in the course of their careers, every manager will have a cosmology episode: their worlds will get turned upside down. Having the kind of alertness to weak signals that we see at High Response organizations can help managers avoid this particular psychological crisis. In the case of hantavirus, for example, the puzzle was eventually solved when epidemiologists discovered that recent climatic changes had produced an explosion in the rodent population that carried the virus, which increased the likelihood that humans might be exposed to hantavirus. In cosmological episodes, paying very close attention to details can definitely restore a sense of mastery.

What I have repeatedly noticed is that people who really get into trouble during these crisis are those who try to think everything through before taking action. The problem with defining and refining your hypothesis without testing them is that the world keeps changing, and your analysis gets further and further behind. So you have constantly got to update your thinking while you are sitting there and reflecting. And that is why I am such a proponent of what I call 'sensemaking'. There are many definitions of 'sensemaking' for me it is the transformation of raw experience into intelligible world

views. It's a bit like what mapmakers do when they try to make sense of an unfamiliar place by putting it on paper. But the crucial point in cartography is that there is no one best map of a particular place. Similarly sensemaking lends itself to multiple conflicting interpretations, all of which are plausible. If an organization finds itself unsure of where it's going, or even where it's been, then it ought to be wide open to a lot of interpretations, all of which can lead to possible action. The action and its consequence then begin to edit the list of interpretations down to a more manageable size.

And this is the point I wish to underscore. Action, tempered by reflection is the critical component in recovery from cosmology episodes. Once you start to act, you can flesh out your interpretations and rework them. It's the action itself that gets you moving. There is a beautiful example of this. Several

years ago a platoon of Hungarian soldiers got lost in the Alps. One of the soldiers found a map in his pocket and the troops used it to get out safely. Subsequently, however, the soldiers discovered that the map they used was in fact the drawing of another mountain range the Pyrennes. In crisis leaders have to act to think.

30. The hantavirus incident **DOES NOT** shows that:
- [1] Ignorance is pervasive
  - [2] Uniqueness in its details can never be enumerated exhaustively
  - [3] Pursuit of rationality is futile
  - [4] None of the above
31. The nature of knowledge that most probably seems to be the ambit of the author in the above passage relates to which of the following?
- [1] Practical knowledge
  - [2] Transcendental knowledge
  - [3] Traditional knowledge
  - [4] None of the above
32. Which of the following is necessarily true and follows from the argument developed in the passage?
- [1] Action and conceptualization about reality is necessarily sequential
  - [2] No concepts can be speculated about without action
  - [3] Establishment of any concept cannot be done through discussions alone
  - [4] None of the above
33. Sense-making as used in the passage refers to skills that primarily depend on:
- [1] The five human senses
  - [2] Memory
  - [3] Skills of cognition
  - [4] None of the above
34. A deja vu is a feeling where everything seems familiar, in order. Behind it, however, is a tragedy for the appearance of order is illusory. Ignorance about the disorder as well as non-experiencing of it builds the illusion. Such a characterization of deja vu is — its use in the passage. (Choose the apt phrase to fill the gap)
- [1] Not inconsistent with
  - [2] Inconsistent with
  - [3] Necessarily follows from
  - [4] Similar to
35. The use of episode in cosmological episode in the passage refers to:
- [1] Possibility of repetition of the experience
  - [2] Disquieting nature of the experience
  - [3] Accumulative nature of the experience
  - [4] None of the above

**Directions (Q. 36):** Please choose the alternative that **CANNOT** go into the sentence in the blank space to make a coherent sentence:

36. The sale of the hotel chain under— resulted in extremely low yield for the promoter.
- [1] DURESS
  - [2] DISTRESS
  - [3] DISTRUST
  - [4] All the above

**Directions (Qs. 37 to 38):** Please choose the correct alternative that can go into the sentence in the blank space to make a coherent sentence:

37. The \_\_\_\_\_ of the country should take a greater interest in promoting the indigenous works that are rooted in the deep traditions of scholarship across the world.  
[1] LITERATI                      [2] LITERATE                      [3] LITERATURE                      [4] LITERAL
38. \_\_\_\_\_ of different categories of problems often leads to design of improper solutions that fail to address the complexities of the problem.  
[1] CONFABULATION    [2] CONFLATION                      [3] CONFLICT                      [4] CONFESSION

**Directions (Qs. 39 to 40):** are based on the following dialogue between a Japanese (J) manager and an American (A) manager. Based on the dialogue please answer the following questions.

- J:** Welcome to Japan! We are at your service. May I have the privilege of inviting you to play a round of golf together.  
**A:** That is excellent! Golf has been one of my favourites. Some of my most memorable moments were on the golf course. Let us go. It will be a nice relaxation for me as well - it would take away the jet lag, before we sit to discuss the contract.  
**J:** Surely, thanks for giving me the privilege to play host. I will take you to the best golf club in this part of the world.  
**A:** Is golf very common among Japanese executives?  
**J:** It depends, you know, on how you look at it. Doesn't everything really depend like that - on how we look at it - even concepts of winning and losing!  
**A:** That sounds interesting.  
**J:** Is it!  
**A:** Well, there it goes.. Wah!  
**J:** So, you have won - you are really good at golf. Why don't we -play another round tomorrow.  
**A:** Well.. (long pause) OK.  
**J:** So, you have won again.. tomorrow is a good day for golf- many of my business friends would be here and I will introduce you to them.  
**A:** But, when will we sit for discussing the contract.  
**J:** Well, if you want we can sit right away, we can go down to my office.  
**A:** That is what I think we should do  
**J:** It is my privilege.
39. Emotions often get manifested as a 'mental state' of a speaker. A dialogue often reveals that. Based on the dialogue. Which of the following best characterizes the emotional state of the American manager?  
[1] Reposed                      [2] Recalcitrant                      [3] Resplendent                      [4] None of the above
40. The dialogue reveals a swing in the mood of the American manager from \_\_\_\_\_ to \_\_\_\_\_. Which of the following pairs of words (in the same order) best completes the sentence coherently?  
[1] Rejuvenation, Desperation                      [2] Elation, Exasperation  
[3] Relaxation, Tension                      [4] Happiness, Fury

## SECTION B

### DATA INTERPRETATION AND LOGICAL ABILITY

**Directions (Qs. 41 to 65):** Each group of questions in this section is based on a set of conditions. In answering some of the questions, it may be useful to draw a rough diagram. Choose the response that most accurately and completely answers each question and blacken the corresponding space on your answer sheet.

Seven instructors –J, K, L, M, N, P and Q – teach management courses at a premier institute in east India. Each instructor teaches during exactly one term: the first term, the second term, or the third term. The following conditions apply:

K teaches during the third term.

L and M teach during the same term.

Q teaches during either the first term or the second term.

Exactly twice as many instructors teach during the third term as teach during the first term.

N and Q teach during different terms.

J and P teach during different terms.

41. Which one of the following could be an accurate matching of instructors to terms?  
[1] M: the first term; P: the second term; Q: the first term  
[2] J: the third term; L: the third term; P: the third term  
[3] L: the first term; N: the second term; P: the third term  
[4] J: the first term; M: the third term; N: the second term
42. Which one of the following cannot be true?  
[1] L teaches during the first term  
[2] M teaches during the second term  
[3] M teaches during the third term.  
[4] N teaches during the second term
43. If exactly one instructor teaches during the second term, which one of the following must be true?  
[1] J teaches during the third term  
[2] L teaches during the first term  
[3] M teaches during the third term  
[4] P teaches during the second term
44. Each of the following contains a list of instructors who can all teach during the same term EXCEPT:  
[1] J, K, M                      [2] J, L, M                      [3] K, L, P                      [4] K, P, Q
45. If more instructors teach during the second term than teach during the first term, then which one of the following instructors must teach during the second term?  
[1] J                                  [2] M                                  [3] N                                  [4] P

**Directions (Qs. 46 to 50):**

Sourav's Fish Salon serves a special Friday night seafood banquet consisting of seven courses - hilsa, pomfret, Indian shrimp, rahu, kingfish, lobster, and bhetki. Diners are free to select the order of the seven courses, according to the following conditions:

The kingfish is served sometime after rahu. Exactly one course should be served between the pomfret and the Indian shrimp.

The lobster is served some time before the pomfret.

The kingfish is served either fifth or sixth. The hilsa is served second.

46. Which one of the following sequences would make for an acceptable banquet?
- [1] rahu, hilsa, lobster, bhetki, pomfret, kingfish, Indian shrimp
  - [2] rahu, hilsa, bhetki, pomfret, kingfish, Indian shrimp, lobster
  - [3] lobster, hilsa, pomfret, rahu, kingfish, Indian shrimp, bhetki
  - [4] lobster, hilsa, rahu, kingfish, pomfret, bhetki, Indian shrimp
47. If kingfish is the fifth course served, then which one of the following MUST BE true?
- [1] Pomfret is the third course served
  - [2] Indian shrimp is the fourth course served
  - [3] Bhetki is the seventh course served
  - [4] Lobster is the first course served
48. Which one of the following would make it possible to determine the EXACT ordering of the courses?
- [1] Pomfret is the fourth course served
  - [2] Indian shrimp is the fifth course served
  - [3] Kingfish is the sixth course served
  - [4] Lobster is the first course served
49. If kingfish is the sixth course served, then which one of the following CANNOT be true?
- [1] Rahu is the fifth course served
  - [2] Indian shrimp is the seventh course served
  - [3] Pomfret is the fifth course served
  - [4] Lobster is the third course served
50. If Bhetki is the third course served, which one of the following MUST BE true?
- [1] Pomfret is the fourth course served
  - [2] Kingfish is the fifth course served
  - [3] Rahu is the first course served
  - [4] Indian shrimp is the seventh course served

**Directions (Qs. 51 to 56):** During one week, a human resource director conducts five interviews for a new job, one interview per day, Monday through Friday. There are six candidates for the job - Ram, Shyam, Trilochan, Usha, Veena, and Kishore. No more than two candidates are interviewed more than once. Neither Shyam nor Usha nor Veena is interviewed more than once, and no other candidate is interviewed more than twice. The schedule of interviews is subject to the following conditions:

If Trilochan is interviewed, then Trilochan must be interviewed on both Monday and Friday.

If Shyam is interviewed, then Usha is also interviewed, with Shyam's interview taking place earlier than Usha's interview.

If Ram is interviewed twice, then Ram's second interview takes place exactly two days after Ram's first interview.

If Veena is interviewed, then Kishore is interviewed twice, with Veena's interview taking place after Kishore's first interview and before Kishore's second interview.

If Usha is interviewed then Ram is also interviewed, with Usha's interview taking place on a day either immediately before or immediately after a day on which Ram is interviewed.

51. Which of the following could be a complete and accurate list of candidates the human resources director interviews and the days on which those interviews take place?
- [1] Monday: Shyam; Tuesday: Usha; Wednesday: Ram; Thursday: Kishore; Friday: Ram;  
 [2] Monday: Shyam; Tuesday: Kishore; Wednesday: Ram; Thursday: Kishore; Friday: Usha;  
 [3] Monday: Trilochan; Tuesday: Ram; Wednesday: Shyam; Thursday: Ram; Friday: Trilochan;  
 [4] Monday: Trilochan; Tuesday: Ram; Wednesday: Kishore; Thursday: Veena; Friday: Trilochan;
52. If Veena is interviewed on Tuesday, then which one of the following **MUST BE** true?
- [1] Trilochan is interviewed on Friday  
 [2] Usha is interviewed on Thursday  
 [3] Ram is not interviewed  
 [4] Shyam is not interviewed
53. If Kishore is not interviewed, then which one of the following **MUST BE** true?
- [1] Ram is interviewed on Thursday  
 [2] Shyam is interviewed on Tuesday  
 [3] Trilochan is interviewed on Monday  
 [4] Usha is interviewed on Wednesday
54. If Shyam is interviewed, then which one of the following could be true?
- [1] Kishore is interviewed on both Tuesday and Wednesday  
 [2] Usha is interviewed on Monday  
 [3] Veena is interviewed on Tuesday  
 [4] Shyam is interviewed on Thursday
55. If neither Usha nor Trilochan is interviewed, then each of the following **MUST BE** true EXCEPT:
- [1] Ram is interviewed on Monday  
 [2] Ram is interviewed on Thursday  
 [3] Veena is interviewed on Tuesday  
 [4] Kishore is interviewed on Wednesday
56. If both Usha and Veena are interviewed, then which one of the following is a complete and accurate list of the days on which Kishore could be interviewed?
- [1] Monday, Friday  
 [2] Tuesday, Thursday  
 [3] Monday, Wednesday, Friday  
 [4] Tuesday, Wednesday, Thursday

**Directions (Qs. 57 to 61):** Analyze the following statements and give an appropriate answer.

K. C. Das is preparing special puja sweet packages. Different sweet packages are numbered 1 through 5 from left to right, and K.C. Das is filling them with different sweets. Each package will contain at least one, but not more than two of the following types of sweets: Gulabjamun, Kaju barfi, Petha, Rasgulla, Sohan halwa, and Cham cham. Each type of sweet will be placed in at least one sweet package. These sweets will be packed either in a bucket, or a carton or a tin. K. C. Das fills the packages according to the following conditions:

At least two packages must contain Rasgulla. Exactly two packages must contain Kaju barfi, and these packages cannot be adjacent to each other.

Both packages that contain Kaju barfi must be to the left of any packages that contain Gulabjamun.

Package 2, 3, and 4 cannot contain Sohan halwa.

Any package that contains Rasgulla must be packed in a carton.

Any package that contains, Kaju barfi must be packed in a bucket.

Package 2 is packed in a carton.

57. Which one of the following CANNOT be true?  
 [1] Package 1 is packed in a tin.  
 [2] Package 2 contains Cham cham.  
 [3] Package 3 is packed in a tin.  
 [4] Package 4 contains Kaju barfi.
58. If a package containing sweets and packed in a tin is not adjacent to a package packed in a bucket, then which one of the following MUST be true?  
 [1] Package 1 contains Petha  
 [2] Package 4 contains Kaju barfi.  
 [3] Package 4 contains Rasgulla  
 [4] Package 5 contains Gulabjamun.
59. If Rasgulla are contained in the maximum number of packages, which one of the FOLLOWING must be true?  
 [1] Package 3 is packed in a bucket.  
 [2] Package 4 is packed in a bucket.  
 [3] A package containing Sohan halwa is packed in a bucket.  
 [4] A package containing Gulabjamun is packed in a carton.
60. If package 4 contains Petha and Cham cham, which one of the following pairs of sweets must be contained in the same package as each other?  
 [1] Kaju barfi and Sohan halwa.  
 [2] Gulabjamun and Petha.  
 [3] Rasgulla and Cham cham.  
 [4] Gulabjamun and Sohan halwa.
61. If package 3 is packed in a tin, which one of the FOLLOWING COULD be false?  
 [1] Package 1 contains Sohan halwa.  
 [2] Package 2 contains Rasgulla.  
 [3] Package 3 contains Cham cham.  
 [4] Package 4 is packed in a bucket.

**Directions (Qs. 62 to 65):** are based on the following:

Seven persons A, B, C, D, E, F and G contested in a game show that had total prize money of Rs.14 lakhs. Every contestant won some prize money and the highest prize money was Rs.3.5 lakhs. No two contestants won the same amount of prize money. For every contestant the difference with the next highest and the next lowest winner is the same.

C won Rs.2 lakhs.

B won more money than A

The difference of prize money between B and A was the minimum

The difference of prize money between D and F was not the least.

There was at least one person whose prize money was between that of E and G

62. Which of the following is a proper list of persons in increasing order of prize money won?  
 [1] G, C, F, B, E, D, A [2] D, F, C, E, A, B, G  
 [3] F, C, D, E, A, B, G [4] A, B, G, C, F, E, D
63. If D won more than E, and Band G together won Rs.3.5 lakhs, which of the following MUST be true?  
 [1] D won Rs.3.5 lakhs [2] A won Rs.1.5 lakhs  
 [3] B won Rs.1.5 lakhs [4] C won Rs.50,000
64. If the difference of prize money between A and C is the minimum, which of the following pairs MUST NOT have won prize money that differs by the minimal amount?  
 [1] B and E [2] C and G  
 [3] D and G [4] A and E

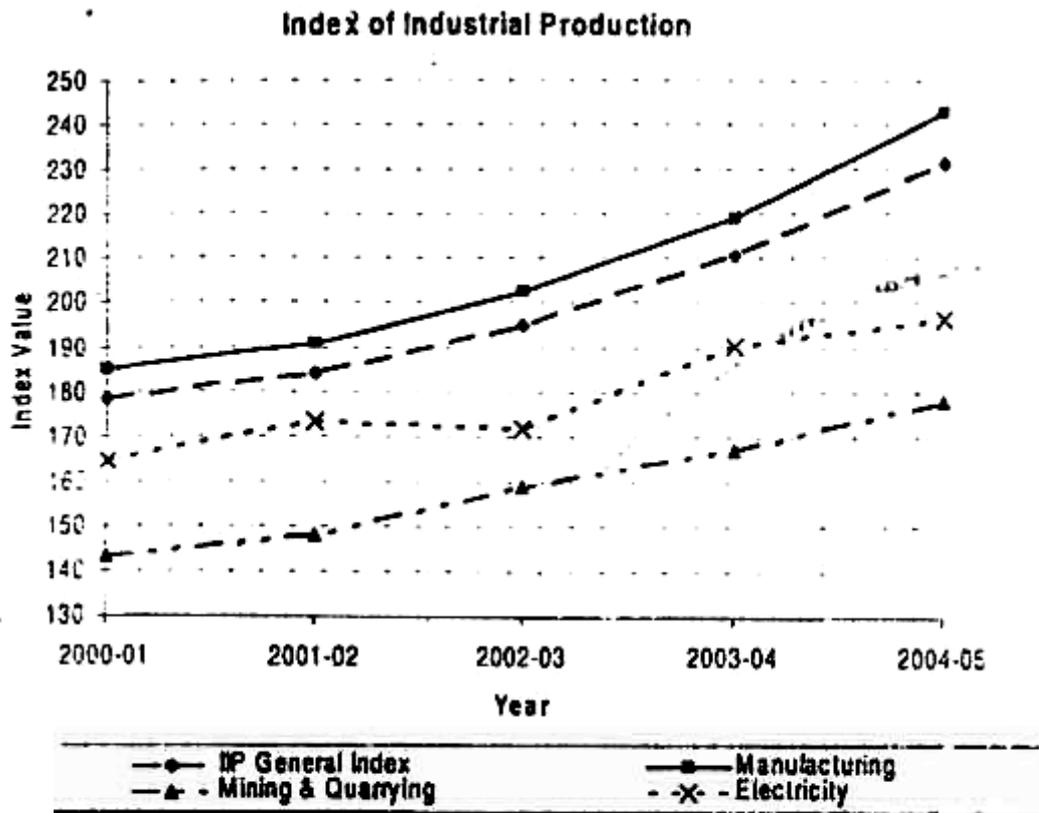
65. If the total money won by A and D is equal to that of G, and the difference between E and D is atleast 1 lakh, then which of the following MUST be TRUE?  
 [1] A and B together won Rs. 3 lakhs  
 [2] B and F together won Rs. 3.5 lakhs  
 [3] C and E together won Rs. 3 lakhs  
 [4] B and C together won Rs 3.5 lakhs

**Directions (Qs. 66 to 70):** Answer the following questions on the state of affairs of Indian economy using the data given in the following table:

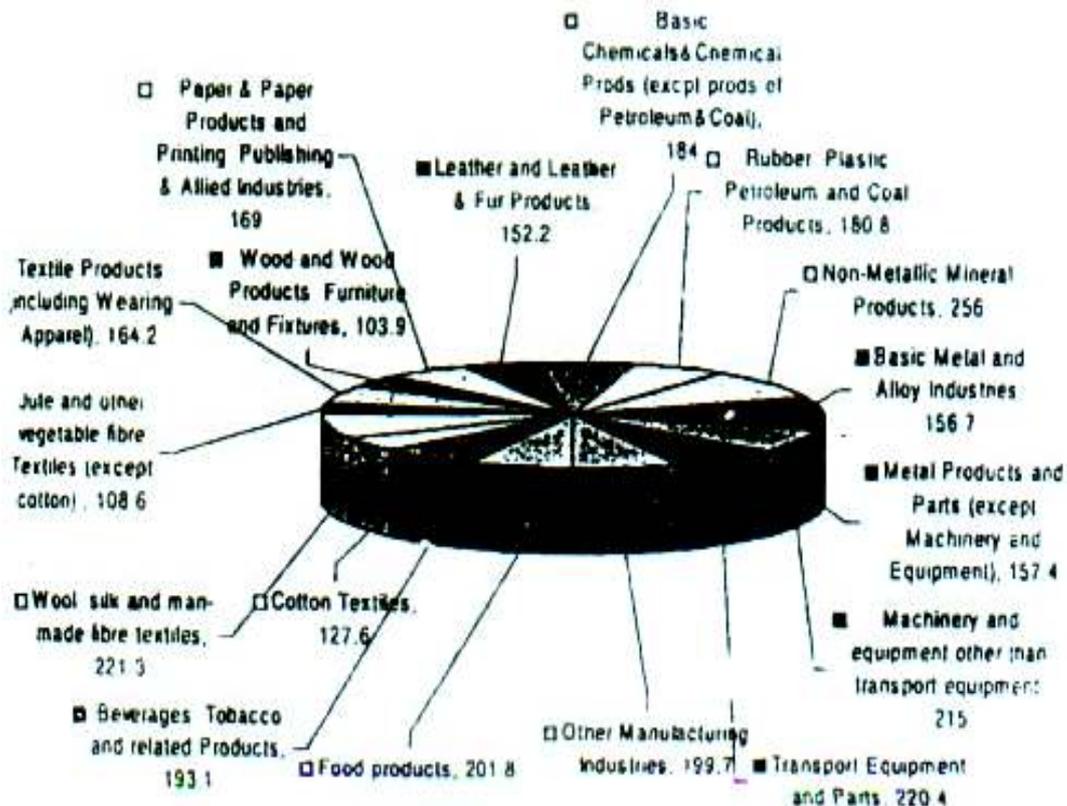
Description	Units	Scale	2002	2003	2004	2005	2006
Current account balance	US dollars	Billions	7.061	6.853	-0.837	-13.524	-16.408
Current account balance in percent of GDP			1.4	1.2	-0.1	-1.8	-2
Gross domestic product based on purchasing -power-parity (PPP) per capita GDP	Ratio US dollars	Units	2682.165	2877.698	3079.727	3315.702	3547.148
Gross domestic product based on purchasing -power-parity (PPP) share of world total	Percent		5.65	5.833	5.913	6.049	6.179
Gross domestic product based on purchasing -power-parity (PPP) valuation of country GDP	US dollars	Billions	2769.335	3023.022	3290.8	3602.894	3918.637
Implied PPP conversion rate	National currency per US dollar Index,		8.691	8.87	9.155	9.276	9.447
Price Index	2000 = 100		108.239	112.358	116.591	121.105	127.272

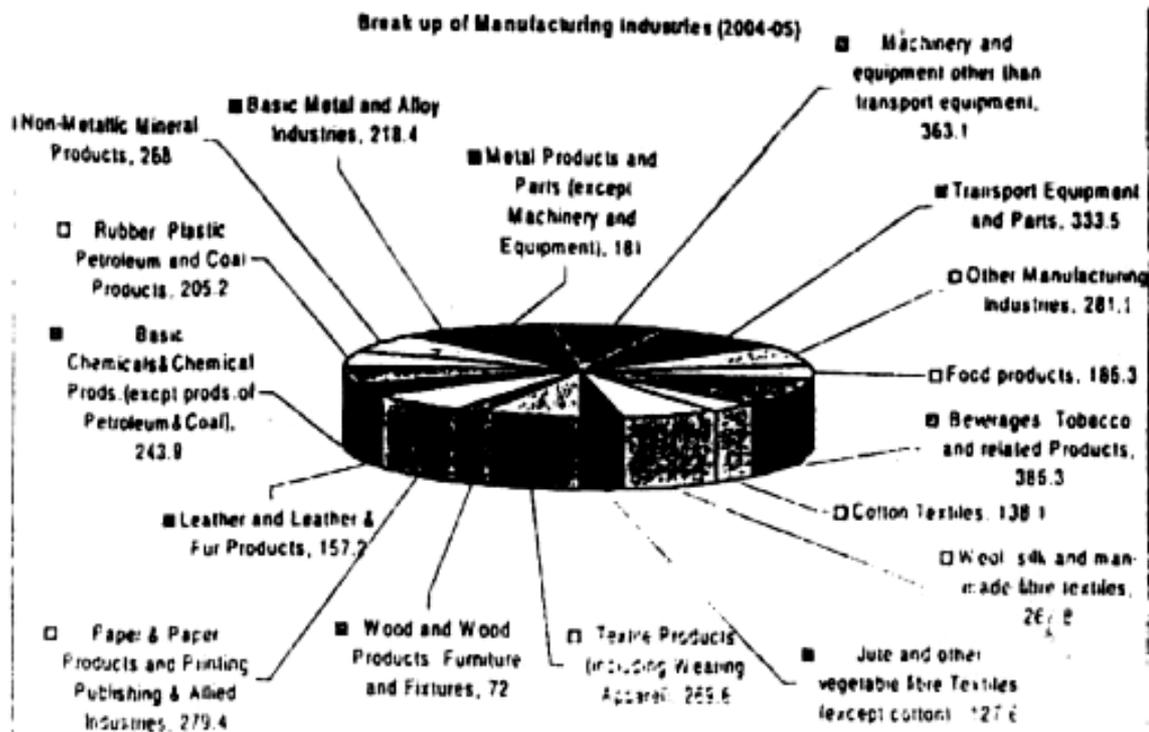
66. Which year India witnessed highest annual growth in GDP based on PPP valuation?  
 [1] 2003 [2] 2004 [3] 2005 [4] 2006
67. From the year 2003 to 2006, highest annual rate of inflation is equal to  
 [1] 6 [2] 5 [3] 4 [4] 3
68. From year 2003 to 2006, growth rate of population in India was highest in  
 [1] 2005 [2] 2004  
 [3] 2003 [4] can't be determined
69. Which year witnessed highest annual change in world's total GDP (based on PPP)?  
 [1] 2006 [2] 2005  
 [3] 2004 [4] can't be determined
70. In which year Indian GDP (at current prices) in national currency was approximately equal to Rs. 30,128 billion?  
 [1] 2003 [2] 2004  
 [3] 2005 [4] None of the above

**Directions (Qs. 71 to 75):** Answer the following questions on the basis of the following graphs. In the pie charts, the value next to the industry category denotes the value of the index for that particular year for a particular industry category.



Break up of Manufacturing Industries (2000-01)





71. Weight of which industry category is highest in the calculation of UP General Index?  
 [1] Manufacturing [2] Mining & Quarrying  
 [3] Electricity [4] None of the above
72. Which of industry category out of textile and allied products category [Textile products (including Wearing Apparel); Jute and other vegetable fibre textiles (except cotton); Wool, silk, and man-made fibre textiles; and Cotton textiles] had the highest growth in the financial year 2004-05 as compared to 2000-01?  
 [1] Cotton textiles  
 [2] Jute and other vegetable fiber textiles (except cotton)  
 [3] Wool, silk, and man-made fibre textiles  
 [4] Textile products (including Wearing Apparel)
73. Comparing the growth from year 2000-01 to 2004-05 in the index of Mining and Quarrying Industry with the Index of Metal Processing Industries [assume weights in IIP: Transport equipment and parts (5%); Machinery and equipment other than transport equipment (5%); Metal products and parts (except Machinery and equipment) (7%); Basic Metal and alloy industries (7%)] in the corresponding period, we see that:  
 [1] Growth in the index of Mining and Quarrying Industry is more than the growth in the Index of Metal Processing Industries.  
 [2] Growth in the index of Mining and Quarrying Industry is less than the growth in the Index of Metal Processing Industries.  
 [3] Growth in the index of Mining and Quarrying Industry is equal to the growth in the Index of Metal Processing Industries.  
 [4] It cannot be determined
74. Which of the industry category has grown fastest during the period from 2003-04 to 2004-05?  
 [1] Electricity  
 [2] Mining and quarrying  
 [3] Manufacturing  
 [4] It cannot be determined

75. Which of the industry category has grown the least during the period from 2004 to 2004-05?  
 [1] Electricity  
 [2] Mining and quarrying  
 [3] Manufacturing  
 [4] It cannot be determined

**Directions (Qs. 76 to 79):** Answer the following questions on the basis of the data given below in the tables.

	FY-05	FY-04	FY-03	FY-02	FY-01	FY-00
<b>Industry</b>						
Basic Goods	196.4	183.2	172.1	164.6	158.6	159.6
Capital Goods	341.9	278	222.1	201.2	192.2	194.4
Intermediate Goods	223.7	210.5	199.9	185.1	190.6	178.6
Consumer Durables	332	299.7	243	276.7	257.2	257.8
Consumer Non-durables	227	205.7	202.4	185.1	171.4	165.5

\* FY-05 implies financial year 2004-05

<b>Weights</b>	<b>1980-81</b>	<b>1993-94</b>
Basic goods	394.18	355.12
Capital goods	164.27	96.87
Intermediate goods	205.07	264.39
Consumer durables	25.5	51.15
Consumer non-durables	210.98	232.47

76. Index of consumer goods is created by finding out the weighed average of the consumer durable and non-durable goods. Therefore index of production of consumer goods from the financial' year 2001 to 2005 when the base year is 1993-94 is:  
 [1] 186.9, 201.6, 199.7, 212.6, 245.9  
 [2] 186.9, 201.6, 209.7, 222.6, 245.9  
 [3] 182.2, 186.9, 201.6, 209.7, 222.6  
 [4] 182.2, 201.6, 209.7, 222.6, 245.9
77. Index of production of consumer goods from the financial year 2000 to 2004 when the base year is 1980-81 is:  
 [1] 180.7, 194.9, 206.8, 215.8, 238.3  
 [2] 175.5, 180.7, 184.9, 196.8, 215.8  
 [3] 180.7, 194.9, 206.8, 215.8, 238.3  
 [4] 175.5, 180.7, 194.9, 206.8, 215.8
78. IIP General Index is constructed by calculating the weighted average of production of all the categories of goods. Therefore the IIP General Index from the year financial 2001 to 2005 when the base year is 1993-94 is:  
 [1] 174.4,184.1,194.9,210.8,231.8  
 [2] 174.4,178.3,184.1,194.9,210.8  
 [3] 178.3,180.3,184.1,194.9,210.8  
 [4] 178.3,184.1,194.9,210.8,231.8
79. If we use the 1980-81 weights for calculating the UP General Index then the index from the year financial 2000 to 2004 is  
 [1] 175.9, 181.9, 194.2, 212.1, 212.1  
 [2] 172.9, 175.9, 181.9, 194.2, 212.1  
 [3] 175.9, 181.9, 194.2, 212.1, 235.8  
 [4] 172.9, 175.9, 181.9, 194.2, 235.8

**Directions (Qs. 80 to 83):** Data is given on the last page of this section.

There are three coalitions, namely Apple, Banana and Guava, in the national politics of a Socialist Democratic country on this Earth. Apple, which has won 255 seats in the current election, comprises of A, C, D, E, and J. Banana, which has won 232 seats in the current election, comprises of B, F, G, H, I, K, L, M, N, and O. Rest of the parties belong to Guava coalition. The total number of seats contested in the elector was 509.

Rules of Government Formation:

- I. If a coalition gets more than half of the total seats then it can form the national government.
- II. If no one gets the required majority then the nation will go for another general election.

Party	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
A	30	13	2	11	8	18	1	8	6	19	7	
B	2	7	10	16	2	18	38	0	8	24	10	3
C	1	0	0	0	0	0	4	0	12	0	0	26
D	0	0	0	0	0	0	0	0	0	0	35	1
E	0	19	0	0	2	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	19	0
G	0	0	0	0	0	0	0	0	0	0	16	0
H	0	0	0	0	0	0	12	0	0	0	0	0
I	0	0	0	0	0	0	0	0	11	0	0	0
J	1	0	0	0	1	3	0	0	0	0	2	3
K	0	0	0	0	0	0	9	0	0	0	0	0
L	0	6	0	0	0	1	0	0	0	0	1	0
M	0	0	0	0	0	0	0	0	0	8	0	0
N	0	0	0	0	0	0	0	0	1	0	5	0
O	0	0	0	0	4	0	0	0	1	0	0	0
P	5	0	0	0	0	0	0	0	0	0	0	0
Q	5	0	0	0	0	0	0	0	0	0	0	0
R	0	1	0	0	1	1	0	0	0	0	1	0
S	0	4	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	0	0	4	0

Here, R 1 implies Region 1, R2 implies Region 2 and so on.

80. Party E comes out of Apple coalition and joins Banana coalition; party J pulls itself out of Apple coalition joins Guava coalition; party F and G comes out of Banana coalition and joins Apple coalition; and party A in Region 6 splits into two groups of equal representatives, one group remains with the Apple coalition and another joins Guava coalition. In this scenario which coalition will have the required numbers to form the national government?  
 [1] Apple  
 [2] Banana  
 [3] Guava  
 [4] Nation will general election have to go in for another
81. Five seats fell vacant in Region 12 after the untimely death of the signing members of the current parliament. Two of these seats were formerly won by party C, two by party A, and one by party C. After fresh elections in these five seats, party C retained one of the seat and the other seat went to party A; party A retained one seat and the other went to party 8; and party 8 retained its only seat which went for reelections. The percentage of seats of party C in region 12 is:  
 [1] 72.5%                      [2] 65%                      [3] 62.5%                      [4] 60%

82. It has been seen that the number of seats won by party A in region I is directly proportional to the number of voters who voted in the elections. In the last elections all 10 million listed voters voted in region I. In the current election there is a ten percent increase in the list of eligible voters, out of which eighty percent voted in addition to the 10 million voters who voted last time. Assuming that in the other regions party A has won same number of seats as in the last elections, what will be the approximate number of seats won by party A in the current elections?  
 [1] 147 [2] 146  
 [3] 145 [4] Can't be determined.
83. Last election in Region 10, out of ten million voters thirty percent were very old voters. In the current elections fifty percent of them died and were, removed from the list of eligible voters. At the same time two-million new citizens got-voting rights, If the number of seats won by party B in region 10 is directly proportional to the number of votes in that region then approximately how many seats party B will win?  
 [1] 25 [2] 24  
 [3] 23 [4] Can't be determined

### SECTION C

#### QUANTITATIVE ABILITY

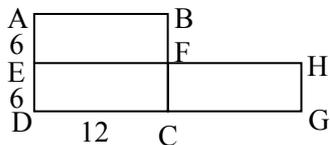
84. In the magic square below, the sum of the numbers in each of the rows, in each of the diagonals and in each of the columns is equal.

y	x	y-2
y-1	y+1	

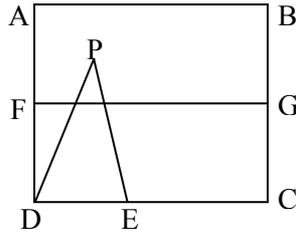
If  $x = 10$ , then the possible value of  $y$  is

- [1] 5 [2] 7  
 [3] 9 [4] None of the above
85. If  $x + 1/x = 2$ , then the value of  $x^2 + 1/x^2$  is:  
 [1] 6 [2] 4 [3] 2 [4] 0
86. If the common factor of  $px^2 + qx + r$  and  $qx^2 + px + r$  is  $(x+2)$ , then  
 [1]  $p = q$  or  $p + q + r = 0$  [2]  $p = r$  or  $p + q + r = 0$   
 [3]  $q = r$  or  $p + q + r = 0$  [4]  $p = q = r$
87. The G.C.D. and L.C.M. of two polynomials are respectively  $x + 1$  and  $2(x + 1)(x^2 - 4)$ , If one of the polynomials is  $(x + 1)(x - 2)$ , then the other is  
 [1]  $x^2 - x - 2$  [2]  $(x + 1)(x + 2)$  [3]  $2(x^2 - x - 2)$  [4]  $2x^2 + 6x + 4$
88. If  $a = 24$ ,  $b = 26$ ,  $c = 28$ , then the value of  $a^2 + b^2 + c^2 - ab - bc - ca$  will be  
 [1] 0 [2] 4 [3] 8 [4] 12
89. A number  $n$  said to be perfect if the sum of all its divisors (excluding  $n$  itself) is equal to  $n$ . An example of perfect number is:  
 [1] 9 [2] 15 [3] 21 [4] 6
90. The product  $a/b^2 \times b/a^2$  expressed as the sum of two identical terms, is:  
 [1]  $\frac{1}{a+b} + \frac{1}{a+b}$  [2]  $\frac{a}{b} + \frac{1}{b}$  [3]  $\frac{b}{a} + \frac{b}{a}$  [4]  $\frac{1}{2ab} + \frac{1}{2ab}$

91. If  $x = 6$  and  $y = 3$ , then the value of  $[x + y]^{x/y}$  is  
 [1] 30 [2] 36 [3] 81 [4] 18
92.  $x^3 + px^2 - 7x - 6$  can be factorised into three simple factors only when  $p$  is equal to:  
 [1] 0 [2] 1 [3] 2 [4] 3
93. If the expression  $ax^2 + bx + c$  is equal to 4 when  $x = 0$ , leaves a remainder 4 when divided by  $x + 1$  and a remainder 6 when divided by  $x + 2$  then the values of  $a$ ,  $b$  and  $c$  are respectively:  
 [1] 1, 1, 4 [2] 2, 2, 4 [3] 3, 3, 4 [4] 4, 4, 4
94. The condition that  $x^5 + 10x^4 - 7x^3 + 10ax + 5a^2$  will contain  $x + 1$  as a factor is:  
 [1]  $a = \sqrt{-169}$  [2]  $a = -2$  [3]  $5a^2 - 10a + 16 = 0$  [4]  $5a^2 - 10a - 16 = 0$
95. If  $x^3 + 2x^2 + ax + b$  is exactly divisible by  $x^2 - 1$ , then the values of  $a$  and  $b$  are respectively  
 [1] 1 and 2 [2] 1 and 0 [3] -1 and -2 [4] 0 and 1
96. A set of balls is numbered and the balls are arranged from 1 to 50. Ball number 3 is drawn first and then every 5<sup>th</sup> ball thereafter is drawn. What will be the number of the last ball drawn?  
 [1] 48 [2] 46 [3] 47 [4] 50
97.  $x^2$  varies directly as  $y^3$  and when  $x = 6$ ,  $y = 3$ . Which of the following equations correctly represents the relationship between  $x$  and  $y$ ?  
 [1]  $6x^2 = 3y^3$  [2]  $3y^2 = 6x^3$  [3]  $3x^2 = 2y^3$  [4]  $3x^2 = 4y^3$ .
98. Consider the following diagram If area of ABCD is equal to the area of DEHG, the CG must be equal to



- [1] 18 [2] 12 [3] 10 [4] 6
99. It is given  $y \propto \frac{1}{x^3 - x}$ . For  $x = 2$ , value of  $y$  is  $\frac{1}{6}$ . If  $x = 1$ , value of  $y$  will be  
 [1] 1 [2] 0 [3] -1 [4] None of these.
100. If  $\frac{x^4}{x^9} = 5^{-5}$  then  $x$  is equal to  
 [1] 5 [2] 4 [3] 9 [4] None of these.
101. If a person makes 'J' jobs in 'M' minutes, how many jobs will he make in  $\frac{2}{3}$  hour?  
 (A)  $\frac{2}{3} \frac{J}{M}$  [2]  $\frac{2}{3} \frac{M}{J}$  [3]  $40 \frac{J}{M}$  [4]  $40 \frac{M}{J}$
102. The ratio of boys and girls in a club is 3 : 2. Which of the following could be the actual number of members?  
 [1] 16 [2] 18 [3] 24 [4] 25
103. The area of the square ABCD is 64. Let E, F and G be midpoints of DC, AD and BC respectively. If P is any point inside the rectangle ABCF and if X is the area of the triangle DPE, then which one of the following is necessarily true?



[1]  $8 < X < 16$

[2]  $8 < X < 32$

[3]  $16 < X < 32$

[5]  $16 < X < 64$ .

**Directions (Qs. 104 to 107):** It is given that 5% increase in X always means 3% increase in Y and 5% increase in Y always implies 2.5% increase in Z.

104. Relationship between X and Z could be

[1]  $1.05 X = 1.025 Z$

[2]  $0.5 X = 0.25 Z$

[3]  $25 X = 7.5 Z$

[4]  $250 X = 213 Z$

105. If Y is increased by 30%, then  $Z^2$  should be increased by

[1] 32.25%

[2] 60%

[3] 69%

[4] 90%.

106. If X is increased to 23 from 20, then Y should increase from 100 to

[1] 103

[2] 106

[3] 109

[4] 112.

107. If X is increased from 10 to 15, then Z must increase from 30 to

[1] 35

[2] 45

[3] 60

[4] 75

108. The average weight of 16 tall boys in a class is 50.25 kgs and that of the remaining 8 boys is 45.15 kgs. Find the average weight of all boys in the class.

[1] 4.85 kgs

[2] 48.55 kgs

[3] 48 kgs

[4] 38.55 kgs.

109. A boy read  $\frac{3}{8}$ th of a book on one day and  $\frac{4}{5}$ th of the remainder on another day. If there were 30 pages unread, how many pages did the book contain?

[1] 600

[2] 300

[3] 240

[4] None of these

110. Rs.510/- is divided among A, B and C in such a way that A gets  $\frac{2}{3}$  of what B gets, and B gets  $\frac{1}{4}$  what C gets. Find the share of each.

[1] Rs.60/-, Rs.90/-, Rs.360/-

[2] Rs.150/-, Rs.300/-, Rs.60/-

[3] Rs.120/-, Rs.240/-, Rs.150/-

[4] None of these

**Directions (Qs. 111 to 120):** Let A be a square matrix of order m. Let  $a_{ij}$  be an element in the jth row and the ith column of A.

Let  $a_{ij} = 0$  or 1 for all  $i, j, 1 \leq i \leq m, 1 \leq j \leq m$ .

Further  $a_{ij} = a_{ji}$  for all  $i, j, 1 \leq i \leq m, 1 \leq j \leq m$ .

And let  $a_{ii} = 0$  for all  $i, 1 \leq i \leq m$ .

Let  $B = (b_i | 1 \leq i \leq m)$ . We say A as a realization of B if

$$j = m$$

$$\sum_{j=1}^m a_{ij} = b_i \text{ for all } i, 1 \leq i \leq m.$$

$$j = 1$$

Thus A with  $a_{11} = 0, a_{12} = 1, a_{21} = 1$  and  $a_{22} = 0$  is a realisation of  $B = (1, 1)$ .

Two realisations are considered to be identical if one can be obtained from the other by interchanging certain rows and /or columns.

For a given B, there may be many distinct realisations, or no realisation at all.

111. The number of distinct realisations for (2, 1, 2, 1) is  
 [1] 2 [2] 1 [3] 0 [4] None of A, B, C
112. The number of distinct realisations for (2, 1, 2, 2) is ,  
 [1] 2 [2] 1 [3] 0 [4] None of A, B, C
113. The number of distinct realisations for (2, 1, 2, 1, 1) is  
 [1] 1 [2] 2 [3] 3 [4] None of A, B, C
114. The number of distinct realisations for ( 2, 2, 1, 2, 1) is  
 [1] 2 [2] 1 [3] 0 [4] None of A, B, C
115. The number of distinct realisations for ( 2, 2, 2, 2, 2, 2,) )  
 [1] 3 [2] 2 [3] 1 [4] None of A, B, C
116. The number of distinct realisations for ( 5, 5, 5, 5, 5, 5) )  
 [1] 3 [2] 2 [3] 1 [4] None of A, B, C
117. The number of distinct realisations for (3, 3, 3, 3, 1, 1) is  
 [1] 3 [2] 2 [3] 1 [4] None of A, B, C
118. Let A be a realisation of (3, 3, 3, 3, 1, 1) then the number of  $a_{ij}$ 's that are equal to 1 is  
 [1] 12 [2] 7 [3] 11 [4] None of A, B, C
119. A is a realisation of (3, 3, 2, 2, 1, 1). Number of  $A_{ij}$ 's = 1 is  
 [1] 12 [2] 7 [3] 11 [4] None of A, B, C
120. A is realisation of (3, 3, 3, 3) if no of  $A_{ij}$ 's = 0 is  
 [1] 3 [2] 4 [3] 6 [4] None of A, B, C

**Directions (Qs. 121 to 127):** Complete the following series.

121. The next 3 terms of the series 121143165 are  
 [1] 789 [2] 246 [3] 187 [4] 209
122. The next three terms of the series 814265098 are  
 [1] 386 [2] 194 [3] 943 [4] 650
123. The next three terms of the series 813213246 are  
 [1] 742 [2] 987 [3] 542 [4] 638
124. The next three terms of the series 28204492188 are  
 [1] 299 [2] 436 [3] 380 [4] 456
125. The next three terms of the series 137153163 are  
 [1] 786 [2] 524 [3] 127 [4] 611
126. The next three terms of the series 13102164129 are  
 [1] 778 [2] 612 [3] 542 [4] 358
127. The next three terms of the series 151620294 are  
 [1] 436 [2] 570 [3] 287 [4] 698