

XAT- 2015

Test Booklet No. _____

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INSTRUCTIONS

1. **DO NOT OPEN THIS TEST BOOKLET UNTIL ASKED TO DO SO.**
2. Fill in the information required on the answer sheet. Your test may not be evaluated if the required details are not entered on the answer sheet.
3. This booklet consists of three sections A, B and C with 28, 23 and 33 questions respectively, i.e. a total of 84 questions. If there is a problem with your test booklet, inform the invigilator/supervisor immediately. You will be provided with a replacement.
4. Do not seek clarification on any item in the test booklet from the test invigilator or the centre supervisor. Use your best judgement.
5. The time available for completing the three sections is 140 minutes. You are required to answer all three sections and expected to maximize scores in each section.
6. All questions carry equal marks.
7. Each question has five alternatives. Darken the appropriate circle against the question number on the answer sheet. For example, if your answer to question number 1 is 'B', darken fully the circle 'B' against question 1.
8. All answers are to be marked only on the (OMR) answer sheet. Use the margin in the test booklet for rough work. No other piece of paper is permitted for rough work.
9. Use only blue or black ball-point pen for marking answers on the OMR answer sheet. Please do not use gel or ink pens.
10. **NEGATIVE MARKS (one fourth of a mark) may be deducted for each incorrect answer.**
11. Failure to follow instructions and examination norms will lead to disqualification.

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BEST OF LUCK!

Open from this side



Section A: Verbal and Logical Ability

1. Six words are given below:

- I. Cacophonic
III. Calamitous
V. Contraindicative

- II. Cacographic
IV. Catastrophic
VI. Cataclysmic

Which of the above words have similar meanings?

- A. IV & VI only
B. I, II & V only
C. II, V & VI only
D. III, IV & VI only
E. III, IV, V & VI only

2. Read the four sentences given below:

- i. He is the most _____ of the speakers to address us today.
- ii. The belief in _____ justice is the essence of his talk.
- iii. This hall would have been full but for the _____ rain.
- iv. Many in the audience have achieved _____ in their respective fields.

Which of the following sequence of words would most appropriately fit the blanks?

- A. i. Eminent, ii. Imminent, iii. Immanent, iv. Eminence
B. i. Immanent, ii. Imminent, iii. Imminence, iv. Eminence
C. i. Eminent, ii. Immanent, iii. Imminent, iv. Eminence
D. i. Eminent, ii. Immanent, iii. Imminent, iv. Imminence
E. i. Immanent, ii. Imminence, iii. Eminent, iv. Eminence

3. The first and the last sentences of the paragraph are numbered 1 & 6. The others, labelled as P, Q, R and S, are given below:

1. The world of cinema is indeed a strange one and baffles many a critic.
P. But there are incorrigible optimists who see a bright future.
Q. The Pundits still predict doom and they insist that it is the end of the road for cinema.
R. At the temples of the box office, fortunes are made and unmade.
S. The world of cinema has, they say, its own attraction.
6. Perhaps a positive outlook is not unwarranted. A doomsday approach is far too fatal at this stage.

Which of the following combinations given below is the most logically ordered?

- A. 1SQPR6
B. 1RSPQ6

- C. 1RQPS6
D. 1QSPR6
E. 1QPSR6

4. Which of the followings is not a term of 'disapproval'?

- A. infantile
B. charlatan
C. imbecile
D. childlike
E. awful

5. Read the following sentences and choose the option that best arranges them in a logical order.

- I. It is certainly true that the critics—those persons whom the dictionary describes as "skilled in judging the qualities or merits of some class of things, especially of literary or artistic work" — have long harboured murderous thoughts about the conditions of our drama, but their ineffectuality as public executioners is legendary.
II. But not close enough, it would seem, for this "marriage" constitutes the case of an absolute desire encountering a relative compliance.
III. The reviewers, by contrast, come close to being the most loyal and effective allies the commercial theatre could possibly desire.
IV. Perhaps the greatest irony in a situation bursting with ironies is the reiterated idea that the critics are killing the theatre.
V. We all know that when theatre people or members of the public refer to the critics, they nearly always mean the reviewers.

- A. V, IV, III, II, I
B. IV, V, I, III, II
C. IV, I, V, II, III
D. II, V, IV, I, III
E. I, IV, V, II, III

6. In the traditions of many religions throughout the world (including Judaeo-Christian beliefs), there has long been a sustained belief that the Universe as we know it today did not exist forever in the past, and that there was a spontaneous act which gave birth to all that has been, all that is, and all that will be. In other words, the Universe itself has not been eternal as our senses might indicate at first glance, ...

Which of the following options can meaningfully complete the above sentence?

- A. but has a limited lifespan after its creation.
B. but our senses give us the right knowledge.
C. however, on second glance, our religious beliefs are right.

- D. however, it is a ball of intense energy.
E. however, it could not have been created.

7. It is a curious historical fact that modern quantum mechanics began with two quite different mathematical formulations: the differential equation of Schroedinger, and the matrix algebra of Heisenberg. The two, apparently dissimilar, approaches were proved to be mathematically equivalent.

Which of the following sentences would most meaningfully follow the above paragraph?

- A. The two approaches did not start with the same mathematical formulations.
B. These two points of view were destined to complement one another and were ultimately synthesized in Dirac's transformation theory.
C. A third mathematical formulation given by Feynman combines the matrix algebra of Heisenberg and Integral calculus of Leibniz.
D. Quantum mechanics evolved in the twentieth century and came very close to particle physics, especially after the CERN experiments in Switzerland.
E. Earlier, the two formulations were mathematically similar.

8. Ranu is an ordinary sportsperson. In the last two university sprint events, her performances in the heats were pathetic.

Which of the followings, if true, weakens the above argument the most?

- A. She had participated in the college swimming competition and finished last.
B. She is a national shot-put champion.
C. The last two times, Ranu had to compete with national level runners. Had she been in other heats, she would have reached quarterfinals.
D. Ranu was the only player who represented her college in the sprint events.
E. In the college sprint events, Ranu always won.

9. Identify the correct sequence of words that aptly fit the blanks in the following passage.

It is ____ (i) ____ that the accused had ____ (ii) ____ ____ (iii) ____ from all criminal activities by adopting the ____ (iv) ____ of a *sanyasi*. However, despite repeated requests from the counsel for prosecution, the court has ____ (v) ____ a lie detector to ascertain the truth.

- A. (i) inferred, (ii) feigned, (iii) separation, (iv) deportment, (v) proscribed
B. (i) inferred, (ii) forged, (iii) parting, (iv) deportment, (v) proscribed
C. (i) implied, (ii) faked, (iii) separation, (iv) demeanour, (v) proscribed
D. (i) implied, (ii) feigned, (iii) separation, (iv) demeanour, (v) proscribed
E. (i) inferred, (ii) faked, (iii) cessation, (iv) deportment, (v) proscribed

10. In the following pages, I shall demonstrate that there is a psychological technique which makes it possible to interpret dreams, and that on the application of this technique, every dream will reveal

itself as a psychological structure, full of significance, and one which may be assigned a specific place in the psychic activities of the waking state. Further, I shall endeavour to elucidate the processes which underlie the strangeness and obscurity of dreams, and to deduce from these processes the nature of the psychic forces whose conflict or cooperation is responsible for our dreams. This done, my investigation will terminate, as it will have reached the point where the problem of the dream merges into more comprehensive problems, and to solve these we must have recourse to material of a different kind.

Which of the followings would be closest to the ideas expressed in the first two sentences of the above passage?

- A. Overt causes can have only overt effects.
- B. Overt causes have only covert effects.
- C. Covert effects have only covert causes.
- D. You can't judge a book by its cover.
- E. Overt effects can have covert causes.

11. Read the following statements carefully:

Statement 1: If you want to understand the causes that existed in the past, look at the results as they are manifested in the present.

Statement 2: Murali did not work as hard as his friends but had secured 1st rank in the examination.

Which of the following options is correct with respect to the above two statements?

- A. If Statement 2 is right, Statement 1 is invalid.
- B. Statement 1 and Statement 2 are contradictory to each other.
- C. Statement 2 supplements Statement 1.
- D. Statement 2 is a rare occurrence and hence irrelevant.
- E. Statement 1 will hold true even if Statement 2 is valid.

Analyse the following passage and provide appropriate answers for questions 12 to 15 that follow.

The understanding that the brain has areas of specialization has brought with it the tendency to teach in ways that reflect these specialized functions. For example, research concerning the specialized functions of the left and right hemispheres has led to left and right hemisphere teaching. Recent research suggests that such an approach neither reflects how the brain learns, nor how it functions once learning has occurred. To the contrary, in most 'higher vertebrates' brain systems interact together as a whole brain with the external world. Learning is about making connections within the brain and between the brain and the outside world.

What does this mean? Until recently, the idea that the neural basis for learning resided in connections between neurons remained a speculation. Now, there is direct evidence that when

learning occurs, neuro-chemical communication between neurons is facilitated, and less input is required to activate established connections over time. This evidence also indicates that learning creates connections between not only adjacent neurons but also between distant neurons, and that connections are made from simple circuits to complex ones and from complex circuits to simple ones.

As connections are formed among adjacent neurons to form circuits, connections also begin to form with neurons in other regions of the brain that are associated with visual, tactile, and even olfactory information related to the sound of the word. Meaning is attributed to 'sounds of words' because of these connections. Some of the brain sites for these other neurons are far from the neural circuits that correspond to the component sounds of the words; they include sites in other areas of the left hemisphere and even sites in the right hemisphere. The whole complex of interconnected neurons that are activated by the word is called a neural network.

In early stages of learning, neural circuits are activated piecemeal, incompletely, and weakly. It is like getting a glimpse of a partially exposed and blurry picture. With more experience, practice, and exposure, the picture becomes clearer and more detailed. As the exposure is repeated, less input is needed to activate the entire network. With time, activation and recognition become relatively automatic, and the learner can direct her attention to other parts of the task. This also explains why learning takes time. Time is needed to establish new neural networks and connections between networks. This suggests that the neural mechanism for learning is essentially the same as the products of learning. Learning is a process that establishes new connections among networks. The newly acquired skills or knowledge are nothing but formation of neural circuits and networks.

12. It can be inferred that, for a nursery student, learning will ...

- A. comprise piecemeal ideas and disconnected concepts.
- B. be a pleasant experience due to the formation of improved connections among neurons.
- C. lead to complex behaviour due to formation of new connections among neurons.
- D. be better if discrete subjects are taught rather than a mix of subjects.
- E. be a happy experience.

13. Read the following statements and answer the question that follows.

- I. The two hemispheres of the brain are responsible for learning autonomously.
- II. Simultaneous activation of circuits can take place in different areas of the brain.
- III. There are specific regions of the brain associated with sight, touch and smell.
- IV. The brain receives inputs from multiple external sources.
- V. Learning is not the result of connections between neurons.

Which of the above statements are consistent with ideas expressed in the passage?

- A. I, V
- B. II, III

- C. III, V
- D. IV, V
- E. I, II, III

14. Which of the following proverbs best describes the passage?
- A. When student is ready, the master appears.
 - B. Child is the father of the man.
 - C. All's well that ends well.
 - D. You can't teach old dog new tricks.
 - E. Many a mickle makes a muckle.
15. A father and son aged 60 and 25 respectively, have been learning paragliding for quite some time. Based on the passage above, which of the following would be true?
- A. The son would always learn more.
 - B. The father might learn more, if both of them started at the same time.
 - C. The son would learn more, if both of them started at the same time.
 - D. If both of them have been learning since the age of 15, the son would learn more.
 - E. Both of them would always progress equally.

Analyse the following passage and provide appropriate answers for questions 16 to 19 that follow.

Certain variants of key behavioural genes, "risk allele" make people more vulnerable to certain mood, psychiatric, or personality disorders. An allele is any of the variants of a gene that takes more than one form. A risk allele, then, is simply a gene variant that increases your likelihood of developing a problem.

Researchers have identified a dozen-odd gene variants that can increase a person's susceptibility to depression, anxiety, and antisocial, sociopathic, or violent behaviours, and other problems—if, and only if, the person carrying the variant suffers a traumatic or stressful childhood or faces particularly trying experiences later in life. This hypothesis, often called the "stress diathesis" or "genetic vulnerability" model, has come to saturate psychiatry and behavioural science.

Recently, however, an alternate hypothesis has emerged from this one and is turning it inside out. This new model suggests that it's a mistake to understand these "risk" genes only as liabilities. According to this new thinking, these 'bad genes' can create dysfunction in unfavourable contexts—but they can also enhance function in favourable contexts. The genetic sensitivities to negative experience that the vulnerability hypothesis has identified, it follows, are just the downside of a bigger phenomenon: a heightened genetic sensitivity to all experience.

This hypothesis has been anticipated by Swedish folk wisdom which has long spoken of "dandelion" children. These dandelion children—equivalent to our "normal" or "healthy" children, with "resilient" genes—do pretty well almost anywhere, whether raised in the equivalent of a sidewalk crack or a well-tended garden. There are also "orchid" children, who will wilt if ignored

or maltreated but bloom spectacularly with greenhouse care. According to this orchid hypothesis, risk becomes possibility; vulnerability becomes plasticity and responsiveness. Gene variants generally considered misfortunes can instead now be understood as highly leveraged evolutionary bets, with both high risks and high potential rewards.

In this view, having both dandelion and orchid kids greatly raises a family's (and a species') chance of succeeding, over time and in any given environment. The behavioural diversity provided by these two different types of temperament also supplies precisely what a smart, strong species needs if it is to spread across and dominate a changing world. The many dandelions in a population provide an underlying stability. The less-numerous orchids, meanwhile, may falter in some environments but can excel in those that suit them. And even when they lead troubled early lives, some of the resulting heightened responses to adversity that can be problematic in everyday life—increased novelty-seeking, restlessness of attention, elevated risk-taking, or aggression—can prove advantageous in certain challenging situations: wars, social strife of many kinds, and migrations to new environments. Together, the steady dandelions and the mercurial orchids offer an adaptive flexibility that neither can provide alone. Together, they open a path to otherwise unreachable individual and collective achievements.

16. The passage suggests 'orchids':
- A. are insufficient in number.
 - B. are limited to greenhouses.
 - C. end up weaker as compared to dandelions.
 - D. thrive in anaesthetised conditions.
 - E. are always too delicate to survive.
17. Which of the following statements correctly echoes the author's view?
- A. Persons carrying risk allele end up being self-destructive and antisocial.
 - B. Orchids possess humankind's phenomenal adaptability and evolutionary success.
 - C. With a bad environment and poor parenting, all children will have a normal life.
 - D. Children born with genetic vulnerability need not necessarily be sociopaths.
 - E. Genes not only makes you sensitive to disorders, but are also responsible for failures of societies.
18. The word 'diathesis' means:
- A. susceptible to disease
 - B. two-pronged hypothesis
 - C. connected with two kidneys
 - D. missing parts of the body
 - E. living in two different environments

19. Mr. Good and Mr. Evil were batch-mates during the college. Five years after graduating, Mr. Evil was put behind bars for financial fraud while Mr. Good was running a successful NGO, working for orphans. Mr. Good was raised in a protective environment while Mr. Evil was a self-made man.

Based on the above information, which of the following statements is definitely correct?

- A. It can be concluded that Mr. Evil is a 'dandelion', but nothing can be concluded about Mr. Good.
- B. It can be concluded that Mr. Evil is an 'orchid', but nothing can be concluded about Mr. Good.
- C. It can be concluded that Mr. Good is a 'dandelion', but nothing can be concluded about Mr. Evil.
- D. It can be concluded that both Mr. Good and Mr. Evil are 'orchid'.
- E. It is not possible to conclude about 'children typology' of the two batch mates.

Analyse the following passage and provide appropriate answers for questions 20 to 23 that follow.

Alone - he was alone again - again condemned to silence - again face to face with nothingness! Alone! - never again to see the face, never again to hear the voice of the only human being who united him to earth! Was not Faria's fate the better, after all - to solve the problem of life at its source, even at the risk of horrible suffering? The idea of suicide, which his friend had driven away and kept away by his cheerful presence, now hovered like a phantom over the abbe's dead body.

"If I could die," he said, "I should go where he goes, and should assuredly find him again. But how to die? It is very easy," he went on with a smile; "I will remain here, rush on the first person that opens the door, strangle him, and then they will guillotine me." But excessive grief is like a storm at sea, where the frail bark is tossed from the depths to the top of the wave. Dantes recoiled from the idea of so infamous a death, and passed suddenly from despair to an ardent desire for life and liberty.

"Die? oh, no," he exclaimed - "not die now, after having lived and suffered so long and so much! Die? yes, had I died years ago; but now to die would be, indeed, to give way to the sarcasm of destiny. No, I want to live; I shall struggle to the very last; I will yet win back the happiness of which I have been deprived. Before I die I must not forget that I have my executioners to punish, and perhaps, too, who knows, some friends to reward. Yet they will forget me here, and I shall die in my dungeon like Faria." As he said this, he became silent and gazed straight before him like one overwhelmed with a strange and amazing thought. Suddenly he arose, lifted his hand to his brow as if his brain were giddy, paced twice or thrice round the dungeon, and then paused abruptly by the bed.

"Just God!" he muttered, "whence comes this thought? Is it from thee? Since none but the dead pass freely from this dungeon, let me take the place of the dead!" Without giving himself time to reconsider his decision, and, indeed, that he might not allow his thoughts to be distracted from his desperate resolution, he bent over the appalling shroud, opened it with the knife which Faria had

made, drew the corpse from the sack, and bore it along the tunnel to his own chamber, laid it on his couch, tied around its head the rag he wore at night around his own, covered it with his counterpane, once again kissed the ice-cold brow, and tried vainly to close the resisting eyes, which glared horribly, turned the head towards the wall, so that the jailer might, when he brought the evening meal, believe that he was asleep, as was his frequent custom; entered the tunnel again, drew the bed against the wall, returned to the other cell, took from the hiding-place the needle and thread, flung off his rags, that they might feel only naked flesh beneath the coarse canvas, and getting inside the sack, placed himself in the posture in which the dead body had been laid, and sewed up the mouth of the sack from the inside.

20. How was the protagonist planning to resolve his problem?

- A. To give up and surrender.
- B. To commit suicide in the dungeon.
- C. To fight the jailor and escape.
- D. To kill those who came to carry the corpse.
- E. To exchange places with the dead.

21. Which one of the following options is nearest in meaning to that implied by the phrase 'sarcasm of destiny' in this passage?

- A. Destiny makes one a laughing stock.
- B. Destiny ultimately asserts itself.
- C. Triumph of the struggles gone through.
- D. A mockery of the forces of destiny.
- E. Let the enemy have the last laugh.

22. Among the options given below, which phrase specifically captures the change of mood of the protagonist?

- A. To be or not to be
- B. Despair and hope
- C. Depression to daring
- D. Darkness to light
- E. Loathing to yearning

23. Words

- i. Counterpane
- ii. Dungeon
- iii. Guillotine
- iv. Shroud

Related Words

- a. Burial
- b. Bed
- c. Execution
- d. Cell

Which of the above 'related words' on the right-hand side are correctly matched with 'words' on the left-hand side?

- A. i-b, ii-d, iii-c, iv-a
- B. i-a, ii-d, iii-b, iv-c
- C. i-a, ii-d, iii-c, iv-b
- D. i-d, ii-b, iii-a, iv-c
- E. i-b, ii-a, iii-c, iv-d

Analyse the following passage and provide appropriate answers for questions 24 and 25 that follow.

Creative thinking can be used by management teams to produce actions that will potentially increase innovation and identify opportunities. Brainstorming is one technique that can enhance creativity. Brainstorming is usually regarded as a method to be used with groups of people. Although, it can be employed with individuals, the benefit of involving a group is that one person's idea can help to stimulate even more ideas by other group members.

Underlying brainstorming is the idea that people's creativity is restricted because they tend to reject ideas at too early a stage. This can be because they may be imposing imaginary constraints on a problem or making false assumptions. Alternatively, they may be unable to see a problem from multiple perspectives or they may be stereotyping problems and possible solutions and hence failing to see their wider potential. Involvement of people with different perspectives enriches the idea generation.

24. Pick the option that best captures the relationship between the two paragraphs above.
- A. The first paragraph describes a technique and the second is an example that supports it.
 - B. The first paragraph describes a process and the second paragraph contradicts the description.
 - C. The first paragraph describes a technique. The first part of the second paragraph contradicts it and the second part of the second paragraph makes untested claims.
 - D. In the first paragraph, the author conveys the understanding of a subject and in the second paragraph the author complements the first.
 - E. In the first paragraph the author describes a technique and in the second paragraph the author provides explanation of its advantages.
25. Which of the following options would be closest to the main argument in the second paragraph above?
- A. Viewing students as customers, future alumni, brand ambassadors, potential recruiters etc., would make engineering colleges more successful.
 - B. Good students, after completing the MBA, should play multiple roles in an organization to become successful leaders.
 - C. India does better in team sports like cricket than in individual sports like swimming.
 - D. All departments of the organization, including marketing, should give inputs to generate new ideas for improving customer satisfaction.
 - E. Compared to small entrepreneurial firms, large organisations will definitely generate more ideas.

Analyse the following passage and provide appropriate answers for questions 26 to 28 that follow.

For private goods, competitive markets ensure efficiency despite the decentralized nature of the information about individual's tastes and firms' technologies. Implicitly, market competition solves adverse selection problems and the fixed-price contracts associated with exogenous prices solve moral hazard problems. However, markets fail for pure public goods and public intervention is thus needed. In this case, the mechanisms used for those collective decisions must solve the incentive problem of acquiring the private information that agents have about their references for public goods. Voting mechanisms are particular incentive mechanisms without any monetary transfers for which the same question of strategic voting, i.e., not voting according to the true preferences, can be raised. For private goods, increasing returns to scale create a situation of natural monopoly far away from the world of competitive markets. When the monopoly has private information about its cost or demand, its regulation by a regulatory commission becomes a principal-agent problem.

(Note: Public goods are those in which individuals cannot be excluded from use and where use by one individual does not reduce availability to others, while an individual can be excluded in case of private goods.)

26. For which of the following goods, can markets *not* be efficient?
- A. Packaged water
 - B. Electricity supply at home
 - C. Air
 - D. Petrol
 - E. All of the above
27. Which of the following *cannot be* concluded from the above paragraph?
- A. Public intervention is the panacea when market fails.
 - B. Adverse selection problems as well as moral hazard problems may not arise in competitive markets.
 - C. Strategic voting is nothing but a non-monetary incentive mechanism.
 - D. Lack of access to private information regarding preferences of agent leads to incentive problem.
 - E. Public regulations may address problems associated with natural monopoly.
28. Read the following statements carefully:
- Statement 1:** In India factories dump their waste in the nearby water bodies.
Statement 2: Government is thinking of granting tax benefits to factories which adopt eco-friendly practices.

Which of the following options best captures the relationship between Statement 1 and Statement 2?

- A. Statement 1 is an example of market failure and Statement 2 corroborates Statement 1.
- B. Statement 1 is an example of 'adverse selection problem' and Statement 2 is an example of 'moral hazard problem'.
- C. Statement 1 is an example of market failure while Statement 2 suggests one way of reducing the problem.
- D. Statement 1 is an example of public good and Statement 2 is an example of private good.
- E. In Statement 1 the principal is 'factory' and in Statement 2 the principal is 'government'.

Section B: Decision Making and Analytical Reasoning

Answer questions 29-32 on the basis of information given in the following case.

The Disciplinary Committee of National Political Party (NPP) is meeting today to decide on the future of two of their party members, Mr. Loyal and his son Mr. Produgal. Mr. Produgal is the prime accused in the brutal murder of Mr. Victim, an opposition party leader. Mr. Produgal is in police custody and his appeal for bail has got rejected. Mr. Loyal claims that his son is innocent and Mr. Victim's death was the result of internal rivalry in the opposition party. Though Mr. Loyal is not accused in this case, his weakness for his son is well known. The media is blaming him for influencing key witnesses to protect his son. Severe criticism of this father-son duo, both by the media and some social activists, is damaging the image of the party. However, Mr. Loyal has significant followers within the party and is considered an asset to the party. Any harsh decision against Mr. Loyal would adversely affect the future of NPP and could even lead to a split in the party. This would benefit the opposition.

29. Which of the following actions would adversely affect both NPP and Mr. Loyal, the most?
- A. Take no action against Mr. Loyal.
 - B. Suspend Mr. Produgal from the party with immediate effect.
 - C. Expel Mr. Loyal from the party with immediate effect.
 - D. Ban Mr. Loyal from entering party premises till completion of the court proceedings.
 - E. Initiate an internal inquiry to find the truth.
30. At the Disciplinary Committee meeting, members came up with the following suggestions. Which of the following suggestions would harm the party, the least?
- A. Maintain status-quo.
 - B. Expel Mr. Produgal from the party with immediate effect to maintain party's clean image.
 - C. Initiate an internal inquiry to find the truth.
 - D. Suspend Mr. Produgal from the party with immediate effect but announce that he will be taken back if the court declares him innocent.
 - E. Suspend both Mr. Loyal and Mr. Produgal from the party with immediate effect.
31. Mr. Opportunist, a veteran member of NPP, stakes his claims to be nominated as an NPP candidate in the upcoming election. Mr. Opportunist presented the following arguments in favour of his candidature to the NPP Executive Committee.
- I. Mr. Loyal's candidature in the upcoming election will adversely impact NPP's chances. Hence, the party should not nominate him.
 - II. The party should call a press conference to disown Mr. Loyal. This would enhance the party's image.
 - III. The party would not be able to take any strong disciplinary action against Mr. Loyal, if he gets re-elected.

- IV. I have a lot of goodwill and significant followers in the constituency.
V. None of my close relatives are into active politics.

Which of the following combinations would best strengthen the claim of Mr. Opportunist?

- A. I & III
B. I & IV
C. II & III
D. III & V
E. IV & V
32. The Disciplinary Committee has decided to suspend Mr. Loyal from the party because they felt he was influencing the judicial process. However, Mr. Loyal feels that the committee is biased and he is being framed. Now, election has been announced. The last time, Mr. Loyal had won with a majority on account of his good work. Which of the following options is most likely to resurrect Mr. Loyal's immediate political career?
- A. The main opposition party has invited Mr. Loyal to join the party and contest the election. Chance of winning is high.
B. Not participating in the campaign and instructing his followers to stay away from the campaigning process.
C. Ask his followers to support the NPP nominated candidate and display his loyalty to NPP.
D. Mr. Loyal should contest as an independent candidate. But because of a split in votes, his chances of winning would be low.
E. Influence the nomination process through his followers within NPP, to get one of his close associates nominated.

Answer question 33-35 on the basis of information given in the following case.

Bright Engineering College (BEC) has listed 20 elective courses for the next term and students have to choose any 7 of them. Simran, a student of BEC, notices that there are three categories of electives: Job-oriented (J), Quantitative-oriented (Q) and Grade-oriented (G). Among these 20 electives, some electives are both Job and Grade-oriented but are not Quantitative-oriented (JG type). QJ type electives are both Job and Quantitative-oriented but are not Grade-oriented and QG type electives are both Quantitative and Grade-oriented but are not Job-oriented. Simran also notes that the total number of QJ type electives is 2 less than QG type electives. Similarly, the total number of QG type electives is 2 less than JG type and there is only 1 common elective (JQG) only Job-oriented electives, but less than the number of only Quantitative-oriented electives is same as elective has at least one registration and there is at least one elective in each category, or combinations of categories.

33. On her way back Simran met her friend Raj and shared the above information. Raj is preparing for XAT and is only interested in Grade-oriented (G) electives. He wanted to know the number of G-type electives being offered. Simran replied, "You have all the information. Calculate the number of G-type electives yourself. It would help your XAT preparation". Raj calculates correctly and says that there can be ____ possible answers.

Which of the following options would best fit the blank above?

- A. 3
B. 5
C. 8
D. 9
E. 11
34. Simran prefers J-type electives and wants to avoid Q-type electives. She noted that the number of only J-type electives is 3. Raj's preference is G-type electives followed by Q-type electives. However, they want to take as many common electives as possible. What is the maximum number of electives that can be common between them, without compromising their preferences?
- A. 3
B. 4
C. 5
D. 7
E. Not possible to answer from the above information.
35. Vijay and Raj want to avoid each other. Vijay is interested in J-type electives and wants to avoid Q-type electives. Raj's preference is G-type electives followed by Q-type electives. Raj noted that the number of only G-type electives is 2. Is there a possibility that they would not share any common elective(s)?
- A. Yes. There is a possibility.
B. No. They would meet in one elective.
C. No. They would not be able to avoid in two electives.
D. No. They would meet in five electives.
E. Cannot be solved with the information given.

Answer questions 36-38 on the basis of information given in the following case.

Mr. Dipangshu Barua, a young IT professional, came early to office to assist his boss in the preparation for an important client presentation. When he switched on his computer, he saw an email from Mr. Patel. The email was as follows:

January 2, 2015

Dear Mr. Barua,

This email serves as a follow-up of my conversation with you on December 1, 2014. I have already conveyed need for improvement in your behaviour as desired by your project leader and colleagues. They are yet to notice any visible improvements. I am apprehensive that your failure to act may warrant further action leading to dismissal. I will continue to monitor and assess your performance over the next three months to determine whether improvements meet the expectations. At the same time, I would like to re-affirm that you are very valuable for our organization.

Best Wishes,
Mr. A. Patel
HR Director

36. Initially, the e-mail distracted Dipangshu but he decided to focus on the job. Which of the following options might best explain his decision to do so?
- Mr. Patel would soon be transferred to another department.
 - Last week, Mr. Dipangshu has been assigned to a new team in the same project.
 - Three days back, Mr. Dipangshu has been assigned a new project similar to his final year engineering project.
 - His friend has been hospitalized for the last three months.
 - Failing to perform in the client meeting might further complicate things.
37. The scheduled presentation went off smoothly. Back in his cabin, Dipangshu read Mr Patel's e-mail once more and pondered over it. During the last meeting he tried hard to put forward his explanation but Mr. Patel had not allowed him to speak. Dipangshu was thinking of meeting Mr. Patel once again but was doubtful whether that would help. Incidentally, he had a job offer from a start-up with a comparable salary. If Dipangshu was to join the new job, he had to accept the offer within the next two weeks. However, he cannot think of a life without a job. Dipangshu was confused!

Which of the following options would be the best move for Dipangshu?

- Talk to Mr. Patel and highlight the initiatives he has taken but at the same time start applying for other jobs.
 - Reject the offer from the start-up. Use the next three months to find a better job, but continue in the present job.
 - Resign from this organization right now.
 - Accept the offer, only if the start-up gives a salary hike, else keep prospecting.
 - Accept the offer with a request to give him a 10% salary hike.
38. After a couple of weeks, Mr. Patel came to know that Dipangshu's project leader Mr. John, a very competent senior executive, may have wilfully influenced his team members to file a wrong

complaint against Dipangshu. Mr. John may have done it because Dipangshu has refused to tow John's line. Mr. Patel also came to know that Dipangshu was thinking of quitting this job. He felt regretful about his letter to Dipangshu. He wanted to resolve the complicated situation. He was contemplating following five actions in his mind.

- Talk to Mr. John about Dipangshu and convey to him that losing a bright employee would cost the organization dearly.
- Catch up with Mr. John during coffee break and convey that Dipangshu has a very good track record.
- Chat with Dipangshu during coffee break.
- Catch up with Dipangshu during coffee break and convey that the organization values him.
- Arrange a meeting among Mr. John, Dipangshu and himself to sort out the differences.

Which of the following is the best sequence of actions for resolving the problem?

- I, III, V
- II, III, V
- I, II, IV
- I, IV, V
- III, IV, V

Answer questions 39-41 on the basis of information given in the following case.

A few years back Mr. Arbit and Mr. Boring started an oil refinery business. Their annual earning is currently just 50,000 million rupees. They are now exploring various options to improve the business. Mr. Xanadu, a salesperson from Innovative Technology Solutions (ITS), is trying to sell a new oil refinery technology to Mr. Arbit and Mr. Boring. This technology could potentially enhance their annual earning to 150,000 million rupees within a year. But they have to make one-time investment of 100,000 million rupees to implement the technology. If the technology is not successful, the investment would be lost. Mr. Arbit and Mr. Boring are discussing about possible risks of the investment.

39. Mr. Arbit is enthusiastic about this investment idea but Mr. Boring is a little sceptical. This impasse makes them approach a consultant. The consultant makes some observations. Which of the following observations, made by the consultant, might reduce Mr. Arbit's enthusiasm for the new investment idea?
- Investment is warranted only when benefits outweigh costs.
 - Technology investments give higher earnings in future.
 - Investment in technology leads to reduction of costs in the long run.
 - Technology risks can be controlled.
 - Business is all about taking risky decisions.

40. In order to sell the technology to Mr. Arbit and Mr. Boring, Mr. Xanadu is thinking of five possible sales pitches. Which of the following sales pitches would reduce uncertainties the most for Mr. Arbit and Mr. Boring?
- All other competitors are aggressively investing in risky technologies.
 - If the technology succeeds, the annual earnings would grow 3 times from the next financial year and they would be able to recover the invested money within 1 year.
 - Preliminary studies indicate that success rate of the technology is 85%.
 - The R&D team of ITS is working to counter any possible downside of the technology.
 - Business is all about taking risky decisions.

41. Mr. Arbit and Mr. Boring did not invest in the new technology, but the new technology is a big success. Repentant, they are now estimating the additional amount they would have earned (i.e. forgone earnings) had they invested in the new technology. However, the two owners differed on expected lifespan of the new technology. Mr. Arbit expected lifespan to be 5 years, whereas, Mr. Boring expected it to be 2 years. After the technology gets out-dated, the earnings from the business would drop back to 50,000 million rupees.

What would be the difference between two expected foregone earnings after 5 years of the technology investment, if yearly earnings are deposited in a bank @ 10%, compounded annually?

Note: Forgone Earnings = (Earnings from business with new technology) – (Earnings from business without new technology)

- 231,200 million rupees
- 331,000 million rupees
- 400,510 million rupees
- 431,000 million rupees
- 464,100 million rupees

Answer questions 42-45 on the basis of information given in the following case.

Life Saving Pharmaceuticals (LSP) is an India-based pharmaceutical company. Their business mostly revolves around a couple of generic drugs and a few patented drugs. LSP operates in 30 odd countries and more than 50% of their sales volume is from outside India.

42. If more than 50% of their sales volume is from generic drugs, which of the following options is definitely correct? (Note: All percentages figures are with respect to total sales volume)
- If sales volume of patented drugs in India is 43%, the sales volume of generic drugs in India will be less than 43%.
 - If the sales volume of generic drugs in foreign countries is at least 24%, the sales volume of patented drugs in India will be above 24%.
 - If the sales volume of patented drugs in India is 54%, the sales volume of generic drugs in foreign countries will be above 54%.

- If the sales volume of patented drugs in India is 29%, the sales volume of generic drugs in foreign countries will be above 29%.
- If the sales volume of generic drugs in India is at least 60%, the sales volume of patented drugs in foreign countries will be above 60%.

43. Mr. Sinha, a senior executive of LSP, observes that their business in India is not vibrant. LSP faces stiff competition from Indian and global players, except in rural areas. Interestingly, most of their sales in the rural areas are from cough syrup, used as sedatives by teenagers. Mr. Sinha is planning the following actions to improve business in the long run.

- Invest in development of new drugs.
- Increase sales of cough syrup in the rural markets.
- Try and cut costs.
- Recruit more medical representatives in the rural areas.

Which of the following sequences is best arranged in the descending order of appropriateness?

- I, III, II
- II, I, III
- II, III, I
- IV, II, III
- IV, III, I

44. Mr. Rastogi, HR head of LSP, is contemplating of transferring Mr. Jose, from India to their Luxembourg office. Mr. Jose's wife is also with the HR department of LSP. The couple is expecting their first child within next four months and hence they want to be together. Mr. Rastogi is wondering whether Mr. Jose would accept the transfer. If he doesn't, Mr. Rastogi would have to send a less competent person for this job as early as possible. The office in Luxembourg is very important for the company's future. It is at its nascent stage and does not yet have an HR department. Hence, it is not possible to transfer Mrs. Jose to Luxembourg.

Which of the following options would be most appropriate, from the organization's perspective, to resolve the issue?

- Giving a salary hike to Mr. Jose with a promise to transfer Mrs. Jose to Luxembourg in the near future.
- Giving Mrs. Jose option to work from home while in Luxembourg so that she can be with Mr. Jose.
- Giving Mr. Jose option to work from India for the time being so that he can be with Mrs. Jose in India.
- Giving a salary hike to Mr. Jose to compensate for Mrs. Jose's salary so that she can join Mr. Jose at Luxembourg, even with loss of pay.
- Asking Mr. Jose to accept the offer right now but give him up to six months to join Luxembourg office.

45. Mr. Khan used to work as the Vice President of LSP India. However, he had resigned from LSP India for a better job in New York. In the meantime, his wife was promoted to head the HR of LSP India. Mrs. Khan had struggled hard to reach this position and was quite popular and respected within the organization. Mrs. Khan was contemplating whether she should give up her career and join him in New York. Mrs. Khan is considering the following actions:

- I. Take a break for the time being and focus on personal life. Given her reputation, she can always get back to the same job, if required.
- II. Go to New York, on leave without pay for two months to help Mr. Khan settle down. After that she can come back and resume her responsibility in LSP India.
- III. Request Mr. Khan to look for an equivalent job in India.
- IV. Resign from LSP India, join Mr. Khan in New York, and look for a similar job there.
- V. Request LSP India for a similar position in LSP USA and follow Mr. Khan to New York.

Which of the following sequence of actions can be immediately taken by Mrs. Khan to maintain her work-life balance?

- A. I & II
- B. I & III
- C. I & IV
- D. II & V
- E. III & V

Answer questions 46-48 on the basis of information given in the following case.

Mohan's was a popular fast-food joint at Connaught Place, Delhi. Initially Mohan handled his business alone. His sons, Ram and Kishan, joined the business after graduating from college. Ram was entrepreneurial in nature. Subsequently, another branch of *Mohan's* was opened in Panipat. Mohan had chosen Ram to head the Panipat branch. Though Ram increased sales in a short time, he had stopped using premium quality organic vegetables, the speciality of *Mohan's*. Mohan and Kishan were not happy with his way of doing business.

Now, the foremost challenge for Mohan was to sort out this issue with Ram. Mohan knew that replacing Ram with Kishan was difficult as Kishan did not want to leave Delhi. However, giving a freehand to Ram might have long term negative consequences. Mohan was confused about the future course of actions.

46. Mohan sought the help of five consultants, who gave the following opinions:
- I. Organic vegetables might be a big success at Connaught place but awareness about organic vegetables is low among Panipat customers.
 - II. The Connaught place model can be implemented in Panipat provided the business is prepared to face the consequences.

- III. Many high end restaurants in Panipat use organic vegetables. So, using organic vegetables will not be a differentiating factor.
- IV. Selling prices of their dishes in Panipat are significantly lower. Using organic vegetables will bring down profits.
- V. Premium quality organic vegetables are not easily available in Panipat.

Which of the following set of options would support Ram's argument of not using organic vegetables?

- A. I, III, IV
- B. II, IV, V
- C. I, III, IV, V
- D. II, III, IV, V
- E. All of the above

47. Mohan sought feedback from a few of his businessmen friends, who were familiar with both the branches. Here is what they said:
- Businessman 1: Customers of Connaught place and Panipat are very different.
 - Businessman 2: Customers in Panipat are extremely happy with Ram's behaviour.
 - Businessman 3: Panipat branch does not use the same quality of ingredients but maintains good hygiene and taste.
 - Businessman 4: Who knows, tomorrow the customers of Panipat might also appreciate what Connaught place customers appreciate today!

If Mohan thinks all these are valid concerns, which of the following actions would be best for the business?

- A. Training Kishan to replace Ram in a few months.
- B. Not worrying about ingredients as long as business grows.
- C. Bringing Ram to Connaught place branch.
- D. Naming the Panipat branch as '*Ram's*', and changing it back to *Mohan's*, when needed.
- E. Asking Kishan to run the Panipat branch.

48. After discussing with a few customers, Mohan realised that compromising on the quality of ingredients at Panipat branch may not be a good idea but at the same time he also realised that Panipat branch had grown fast. He was contemplating following five actions. Which of the following actions would be the best for the future of his business?

- A. Creating awareness campaign for organic vegetables in Panipat.
- B. Mohan himself should look after the Panipat branch.
- C. Close down the Panipat branch.
- D. Send Kishan to Panipat branch and bring Ram to Connaught place permanently.
- E. Hire a new person to run the Panipat branch.

Answer questions 49-50 on the basis of information given in the following case.

MBA entrance examination comprises two types of problems: formula-based problems and application-based problems. From the analysis of past data, Interesting School of Management (ISM) observes that students good at solving application-based problems are entrepreneurial in nature. Coaching institutes for MBA entrance exams train them to spot formula-based problems and answer them correctly, so as to obtain the required overall cut-off percentile. Thus students, in general, shy away from application-based problems and even those with entrepreneurial mind-set target formula-based problems.

Half of a mark is deducted for every wrong answer.

49. ISM wants more students with entrepreneurial mind-set in the next batch. To achieve this, ISM is considering following proposals:

- I. Preparing a question paper of two parts, Part A and Part B of duration of one hour each. Part A and Part B would consist of formula-based problems and application-based problems, respectively. After taking away Part A, Part B would be distributed. The qualifying cut-off percentile would be calculated on the combined scores of two parts.
- II. Preparing a question paper comprising Part A and Part B. While Part A would comprise formula-based problems, part B would comprise application-based problems, each having a separate qualifying cut-off percentile.
- III. Assigning one mark for formula-based problems and two marks for application-based problems as an incentive for attempting application-based problems.
- IV. Allotting one mark for formula-based problems and three marks for application-based problems, without mentioning this in the question paper.

Which of the following proposal (or combination of proposals) is likely to identify students with best entrepreneurial mind-set?

- A. II
 - B. I & II
 - C. I & III
 - D. II & III
 - E. II & IV
50. ISM conducts a common entrance examination every year. This year, the question paper would comprise 60 questions with an equal mix of formula-based problems and application-based problems. All questions would carry equal marks. Balaji is appearing for the examination. Before, appearing for the examination he gets the following information from coaching institutes:

- I. Application-oriented problems take more time to solve in an examination hall.
- II. Chances of silly mistakes would be low in application-based problems.

- III. ISM would assist the students with bank loans to start a new venture.
- IV. Options are generally confusing for formula-based problems.
- V. 'Practice makes a man perfect' can apply only to formula-based problems.
- VI. Students get very good campus jobs.

Based on above information, which of the following options would help him to be better prepared for the examination?

- A. I & II
- B. I, III & V
- C. II, III & VI
- D. IV, V & VI
- E. I, II, IV & V

Answer question 51 on the basis of information given in the following case.

51. Innovative Institute of Business (IIB) has decided to be the first green campus in India. IIB Administration has advised all campus residents to reduce carbon footprints. IIB faculty members did a brainstorming and came up with the following suggestions:

- I. Replacing electricity source for street lights with solar panels.
- II. Replacing the existing buildings with environment friendly buildings.
- III. Organizing a seminar on 'Towards a Sustainable Future' involving all students, staff, and experts from around the country.
- IV. Introducing a compulsory course on sustainability to increase awareness among students.
- V. Conducting an initial energy audit to explore where IIB can reduce carbon footprints.

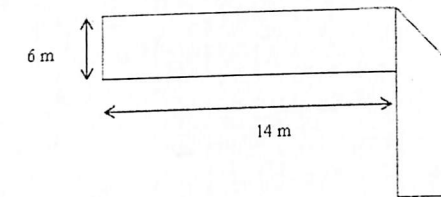
Which of the following options would be the most preferred sequence of actions to reduce carbon footprints on campus?

- A. II, IV, V
- B. IV, V, III
- C. V, I, II
- D. V, I, III
- E. V, III, I

Section C: Quantitative Ability and Data Interpretation

52. What is the sum of the following series?
- 64, - 66, - 68, ... , - 100
- A. - 1458
B. - 1558
C. - 1568
D. - 1664
E. None of the above
53. A solid metal cylinder of 10 cm height and 14 cm diameter is melted and re-cast into two cones in the proportion of 3:4 (volume), keeping the height 10 cm. What would be the percentage change in the flat surface area before and after?
- A. 9%
B. 16%
C. 25%
D. 50%
E. None of the above
54. The Maximum Retail Price (MRP) of a product is 55% above its manufacturing cost. The product is sold through a retailer, who earns 23% profit on his purchase price. What is the profit percentage (expressed in nearest integer) for the manufacturer who sells his product to the retailer? The retailer gives 10% discount on MRP.
- A. 31%
B. 22%
C. 15%
D. 13%
E. 11%
55. Ramesh plans to order a birthday gift for his friend from an online retailer. However, the birthday coincides with the festival season during which there is a huge demand for buying online goods and from the retailers A, B, C and D would be 0.6, 0.8, 0.9 and 0.5 respectively. Playing safe, he orders from all four retailers simultaneously. What would be the probability that his friend would receive the gift in time?
- A. 0.004
B. 0.006
C. 0.216
D. 0.994
E. 0.996

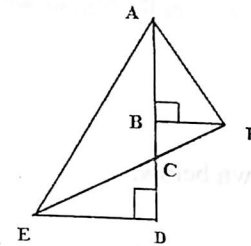
56. The figure below has been obtained by folding a rectangle. The total area of the figure (as visible) is 144 square meters. Had the rectangle not been folded, the current overlapping part would have been a square. What would have been the total area of the original unfolded rectangle?



- A. 128 square meters
B. 154 square meters
C. 162 square meters
D. 172 square meters
E. None of the above
57. Find the equation of the graph shown below.
-
- A. $y = 3x - 4$
B. $y = 2x^2 - 40$
C. $x = 2y^2 - 40$
D. $y = 2x^2 + 3x - 19$
E. $x = 2y^2 + 3y - 19$
58. Product M is produced by mixing chemical X and chemical Y in the ratio of 5:4. Chemical X is prepared by mixing two raw materials, A and B, in the ratio of 1:3. Chemical Y is prepared by mixing two raw materials, B and C, in the ratio of 2:1. Then the final mixture is prepared by mixing 864 units of product M with water. If the concentration of the raw material B in the final mixture is 50%, how much water had been added to product M?
- A. 328 units
B. 368 units
C. 392 units
D. 616 units
E. None of the above

59. A circular road is constructed outside a square field. The perimeter of the square field is 200 ft. If the width of the road is $7\sqrt{2}$ ft. and cost of construction is Rs. 100 per sq. ft. Find the lowest possible cost to construct 50% of the total road.
- A. Rs. 70,400
B. Rs. 125,400
C. Rs. 140,800
D. Rs. 235,400
E. None of the above

60. In the diagram below, $CD = BF = 10$ units and $\angle CED = \angle BAF = 30^\circ$. What would be the area of triangle AED? (Note: Diagram below may not be proportional to scale.)



- A. $100 \times (\sqrt{2}+3)$
B. $100 / (\sqrt{3}+4)$
C. $50 / (\sqrt{3}+4)$
D. $50 \times (\sqrt{3}+4)$
E. None of the above
61. Two diagonals of a parallelogram intersect each other at coordinates (17.5, 23.5). Two adjacent points of the parallelogram are (5.5, 7.5) and (13.5, 16). Find the lengths of the diagonals.
- A. 15 and 30
B. 15 and 40
C. 17 and 30
D. 17 and 40
E. Multiple solutions are possible
62. If $f(x^2 - 1) = x^4 - 7x^2 + k_1$ and $f(x^3 - 2) = x^6 - 9x^3 + k_2$ then the value of $(k_2 - k_1)$ is
- A. 6
B. 7
C. 8
D. 9
E. None of the above

63. In the beginning of the year 2004, a person invests some amount in a bank. In the beginning of 2007, the accumulated interest is Rs. 10,000 and in the beginning of 2010, the accumulated interest becomes Rs. 25,000. The interest rate is compounded annually and the annual interest rate is fixed. The principal amount is:
- A. Rs. 16,000
B. Rs. 18,000
C. Rs. 20,000
D. Rs. 25,000
E. None of the above

64. The tax rates for various income slabs are given below.

Income Slab (Rs.)	Tax rate
≤ 500	Nil
> 500 to ≤ 2000	5%
> 2000 to ≤ 5000	10%
> 5000 to < 10000	15%

There are 15 persons working in an organization. Out of them, 3 to 5 persons are falling in each of the income slabs mentioned above. Which of the following is the correct tax range of the 15 persons? (E.g. If one is earning Rs. 2000, the tax would be: $500 \times 0 + 1500 \times 0.05$)

- A. 1350 to 7350, both excluded
B. 1350 to 9800, both included
C. 2175 to 7350, both excluded
D. 2175 to 9800, both included
E. None of the above
65. If a, b, c and d are four different positive integers selected from 1 to 25, then the highest possible value of $((a + b) + (c + d)) / ((a + b) + (c - d))$ would be:
- A. 47
B. 49
C. 51
D. 96
E. None of the above
66. An ascending series of numbers satisfies the following conditions:
- i. When divided by 3, 4, 5 or 6, the numbers leave a remainder of 2.
ii. When divided by 11, the numbers leave no remainder.
- The 6th number in this series will be:

- A. 242
B. 2882
C. 3542
D. 4202
E. None of the above
67. In an examination, two types of questions are asked: one mark questions and two marks questions. For each wrong answer, of one mark question, the deduction is $\frac{1}{4}$ of a mark and for each wrong answer, of two marks question, the deduction is $\frac{1}{2}$ of a mark. Moreover, $\frac{1}{2}$ of a mark is deducted for any unanswered question. The question paper has 10 one mark questions and 10 two marks questions. In the examination, students got all possible marks between 25 and 30 and every student had different marks. What would be the rank of a student, who scores a total of 27.5 marks?
- A. 5
B. 6
C. 7
D. 8
E. None of the above
68. For a positive integer x , define $f(x)$ such that $f(x + a) = f(a \times x)$, where a is an integer and $f(1) = 4$. If the value of $f(1003) = k$, then the value of 'k' will be:
- A. 1003
B. 1004
C. 1005
D. 1006
E. None of the above
69. Devanand's house is 50 km West of Pradeep's house. On Sunday morning, at 10 a.m., they leave their respective houses.
- Under which of the following scenarios, the minimum distance between the two would be 40 km?
- Scenario I:** Devanand walks East at a constant speed of 3 km per hour and Pradeep walks South at a constant speed of 4 km per hour.
Scenario II: Devanand walks South at a constant speed of 3 km per hour and Pradeep walks East at a constant speed of 4 km per hour.
Scenario III: Devanand walks West at a constant speed of 4 km per hour and Pradeep walks East at a constant speed of 3 km per hour.
- A. Scenario I only
B. Scenario II only
C. Scenario III only
D. Scenario I and II
E. None of the above

70. The median of 11 different positive integers is 15 and seven of those 11 integers are 8, 12, 20, 6, 14, 22, and 13.

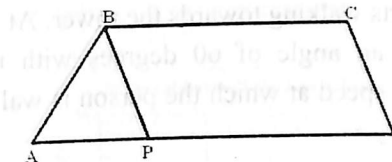
Statement I: The difference between the averages of four largest integers and four smallest integers is 13.25.

Statement II: The average of all the 11 integers is 16.

Which of the following statements would be sufficient to find the largest possible integer of these numbers?

- A. Statement I only.
B. Statement II only.
C. Both Statement I and Statement II are required.
D. Neither Statement I nor Statement II is sufficient.
E. Either Statement I or Statement II is sufficient.

71. The parallel sides of a trapezoid ABCD are in the ratio of 4:5. ABCD is divided into an isosceles triangle ABP and a parallelogram PBCD (as shown below). ABCD has a perimeter equal to 1120 meters and PBCD has a perimeter equal to 1000 meters. Find $\sin \angle ABC$, given $2\angle DAB = \angle BCD$.



- A. $\frac{4}{5}$
B. $\frac{16}{25}$
C. $\frac{5}{6}$
D. $\frac{24}{25}$
E. A single solution is not possible.
72. A three-digit number has digits in strictly descending order and divisible by 10. By changing the places of the digits a new three-digit number is constructed in such a way that the new number is also divisible by 10. The difference between the original number and the new number is divisible by 40. How many numbers will satisfy all these conditions?
- A. 5
B. 6
C. 7
D. 8
E. None of the above
73. The centre of a circle inside a triangle is at a distance of 625 cm. from each of the vertices of the triangle. If the diameter of the circle is 350 cm. and the circle is touching only two sides of the triangle, find the area of the triangle.

- A. 240000
 B. 387072
 C. 480000
 D. 506447
 E. None of the above

74. If the last 6 digits of $[(M)! - (N)!]$ are 999000, which of the following option is *not* possible for $(M) \times (M - N)$?

Both (M) and (N) are positive integers and $M > N$. (M)! is factorial M.

- A. 150
 B. 180
 C. 200
 D. 225
 E. 234
75. A person is standing at a distance of 1800 meters facing a giant clock at the top of a tower. At 5.00 p.m., he can see the tip of the minute hand of the clock at 30 degree elevation from his eye-level. Immediately, the person starts walking towards the tower. At 5.10 pm., the person noticed that the tip of the minute hand made an angle of 60 degrees with respect to his eye-level. Using three-dimensional vision, find the speed at which the person is walking. The length of the minutes hand is $200\sqrt{3}$ meters ($\sqrt{3} = 1.732$).

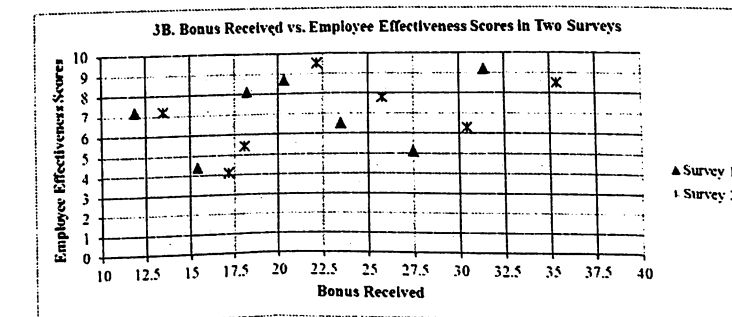
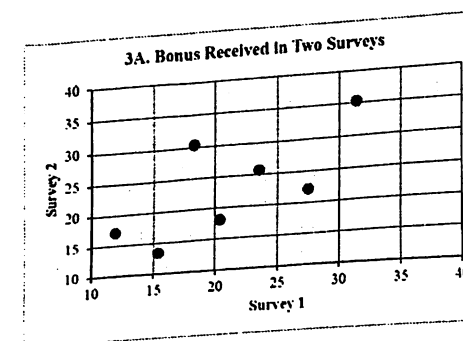
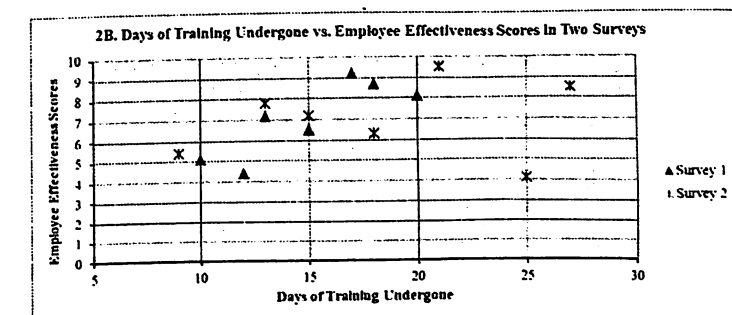
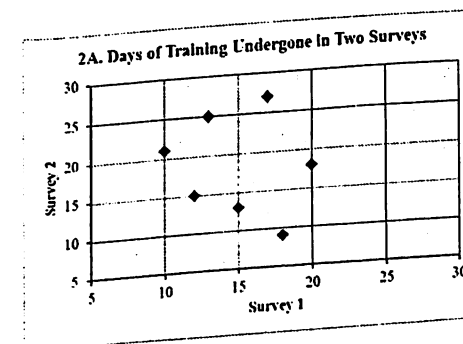
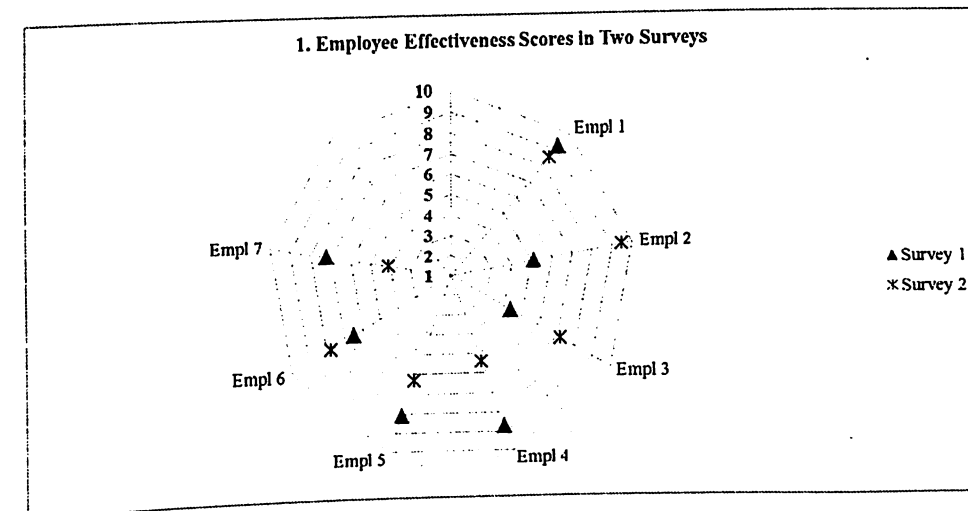
- A. 7.2 km/hour
 B. 7.5 km /hour
 C. 7.8 km /hour
 D. 8.4 km /hour
 E. None of the above

76. Three pipes are connected to an inverted cone, with its base at the top. Two inlet pipes, A and B, are connected to the top of the cone and can fill the empty cone individually in 8 hours and 12 hours, respectively. The outlet pipe C, connected to the bottom, can empty a filled cone in 4 hours. When the cone is completely filled with water, all three pipes are opened. Two of the three pipes remain open for 20 hours continuously and the third pipe remains open for a lesser time. As a result, the height of the water inside the cone comes down to 50%. Which of the following options would be possible?

- A. Pipe A was open for 19 hours.
 B. Pipe A was open for 19 hours 30 minutes.
 C. Pipe B was open for 19 hours 30 minutes.
 D. Pipe C was open for 19 hours 50 minutes.
 E. The situation is not possible.

Answer questions 77-80 on the basis of information given below:

As a part of employee improvement programs, every year an organization conducts a survey on three factors: 1. Number of days (in integers) of training undergone, 2. Amount of bonus (in lacs) received by an employee and 3. Employee effectiveness score (on the scale of 1 to 10). Survey results for last two years are given below for the same seven employees.



77. In Survey 1, what was the average bonus earned by employees who underwent training for more than 17 days?
- Between 16 and 17 lacs
 - Between 17 and 18 lacs
 - Between 18 and 19 lacs
 - Between 19 and 20 lacs
 - None of the above
78. Identify the number of employees whose employee effectiveness score was higher than 7 in Survey 1, but whose bonus was lower than 20 lacs in Survey 2.
- 2
 - 3
 - 4
 - 5
 - None of the above
79. From Survey 1 to Survey 2, how many employees underwent more days of training but their annual bonus decreased?
- 1
 - 2
 - 3
 - 4
 - None of the above
80. From Survey 1 to Survey 2: for how many employees training days increased along with an increase of employee effective score by at least 1.0 rating?
- 2
 - 3
 - 4
 - 7
 - None of the above

Please go to next page...

Answer questions 81-84 on the basis of information given below:

Twitter allows its users to post/share and read short messages known as tweets. Tweets can be of three types - Positive Tweets (in support), Negative Tweets (against) and Neutral Tweets. The following table presents the *Number of Votes* and *Tweets* received by certain political parties.

Parties	Number of Votes			Tweets (Year 2010)		
	Year 2000	Year 2005	Year 2010	Total No. of tweets	Positive Tweets (%)	Negative Tweets (%)
A	329,700	343,200	364,450	131,021	33.3%	35.4%
B	133,450	154,000	241,325	108,128	30.4%	29.7%
C	196,250	123,200	162,525	96,620	32.5%	26.6%
D	27,475	48,400	54,175	41,524	30.6%	36.1%
E	-	30,800	49,250	32,724	21.6%	41.0%
Other Parties*	98,125	180,400	113,275	15,000		

* Any party which has secured less than 2% of the total votes falls under 'Other Parties' category. For example, Party E secured less than 2% of total votes, in the year 2000.

Note: If the vote share (%age of total votes) of a party changes from 15% to 40%, gain in vote share would be 25% (= 40% - 15%).

81. Which of the following options correctly arranges the political parties in descending order of gain in vote share from the year 2005 to the year 2010?
- EBDCA
 - EBCDA
 - EBCAD
 - BCEDA
 - BCEAD
82. Which of the following parties received maximum number of "neutral tweets" in the year 2010?
- Party B
 - Party C
 - Party D
 - Party E
 - One of the parties categorised under 'Other Parties'

83. Between 2000 and 2010, in terms of gain in vote share which of the following *cannot* be a possible value (approximated to one decimal place) for any party?
- A. 2.0%
 - B. 2.5%
 - C. 3.5%
 - D. 4.5%
 - E. 7.5%
84. In 2010, which of the following options has maximum difference between the vote share and tweet share?
- A. Party B
 - B. Party C
 - C. Party D
 - D. Party E
 - E. Other Parties