XAT- 2015

Test Booklet No.

Name _____

XAT ID_____ Booklet Series: B

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.

To open the test booklet, insert a pen beneath this page and tear open along the right side of the test booklet as indicated by the arrow at the bottom of the page.

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BEST OF LUCK!

Open from this side 

Section A: Verbal and Logical Ability

1. 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

C
- *S mentions 'they' which refers 'incorrigible optimists' in P.* → *PS*
- *R should follow '1' as it contains 'baffle'. Moreover, R talks about made and unmade (which is in synch with baffling).* → *'1R'*
- *P mentions 'but' which contradicts the view conveyed in Q.* → *'QP'*
- *S mentions "attraction", that is consistent with positive outlook of optimists hence* → *PS*
- *6 mentions positive outlook and hence* → *PS6*
- *Q mentions 'still' which again contradicts '1R'.* → *'1RQ'*

Hence, Option C (1RQPS6) is the correct answer.

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

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

D *Childlike - Innocent and playful like child.*
In contrast, all other options have negative connotation.

Hence, Option D is the correct answer.

3. 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

B *'II' mentions "this marriage" and 'III' mentions "allies".' III' mentions 'close to being' and 'II' mentions 'but not close enough'. Hence,' II' should follow 'III'.' I' is about critics and 'III' is about reviewers ('by contrast'), hence 'III, should come after 'I'. 'V' talks how 'we' mix up 'critique' and 'reviewers, while V talks about "critics being Reviewers", hence IV should come after V.' I' cannot come in between 'III' and 'II' as stated by the same logic described in the first sentence above. 'I' should come before 'III' as I talks about murderous thoughts and 'III' talks about loyalty which are contrasted. So,' V' should be followed by 'I' and then 'III'.*

Based on above arguments, B is the most logical option.

4. 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.

A *The question being asked is about 'meaningfully complete'*

- *Option B (and Option E) merely restates the last (first) part of the incomplete sentence and*

also starts with 'but' ('however'). For these (B/E) to be the right option, the start of Option B and E should have been with 'hence/therefore etc.' So, Option B and E are not right options.

- *Option C can be neglected on the basis of same logic. Option D is irrelevant as nowhere a reference to energy (or something against energy) has been talked about.*

- *The incomplete line mentions that 'the Universe itself has not been eternal'. So the continuing part should address or complete this argument. Hence, Option A is the correct answer.*

5. 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.

B *Question asked: 'meaningfully follow'*

- *Option A is already mentioned in the passage and hence it is repetition.*
- *Option C talks about integral calculus which is coming abruptly (not mentioned in the passage). Similarly Option D is also irrelevant as concepts like 'particle physics' and 'CERN experiments' are not mentioned previously.*
- *Option E contradicts the first line of the passage. So these are not the right answer.*

Only Option B has reference to the 'two points of view', mentioned previously.

6. 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.

B *The main statement states that 'Ranu is an ordinary sportsperson' and the second statement offers anecdotal evidence (of sprint events) to justify that.*

Option B says that she is a national champion in shot-put. It is worth to note that even if she is incompetent in 'running' that does not mean she 'is an ordinary sportsperson'. In other words, she is a competent sportsperson since she shows her strength in another sport. This strongly discards the main statement. This is the correct answer.

7. Six words are given below:

I. Cacophonic
II. Cacographic
III. Calamitous
IV. Catastrophic
V. Contraindicative
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

D *Cartography is the study and practice of making maps. Cacography means bad handwriting or spelling. Contraindicated is a condition to withhold certain medical treatment.*

Calamitous involves calamity. Catastrophic involves disaster and horrible events. Cataclysmic is similar to catastrophic. Thus, Option D is the correct answer.

8. 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

C - *Eminent – outstanding*
- *Immanent – inherent/existing or operating within*
- *Imminent – about to happen*
- *Eminence – quality of being eminent*

So, Option C is the correct answer. (Imminence means quality of being imminent)

9. 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.

E *The passage can be summarised as follows: dreams are manifestation (overt) of subconscious (covert) psychological structure and process. Hence answer is Option E.*
- *Option A is wrong as overt causes can ALSO occur because of covert effect (essence of passage).*
- *Option B is again wrong following same logic in Option A above.*
- *Option C: Covert effects can come from overt causes and vice versa.*
- *Option D has poor relationship between cause and effect. It states that what is visible (overt) does not indicate what is invisible (covert).*
-

10. 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) prescribed
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) prescribed
E. (i) inferred, (ii) faked, (iii) cessation, (iv) deportment, (v) proscribed

C *Deportment and demeanour are similar and can be replaced in this case. Prescribed and Proscribed are opposite to each other. Cessation always follows "of" ("cessation of").*

The last sentence mentions that court did something "not expected" by the counsel. If Court did not accept counsel's argument that means counsel was "implying" something. If it is "implied" that means the court may not be convinced with counsel's argument(only counsel is implying it) and hence the court can say that there is no need for lie detector test, despite appeal from the counsel (as court is not convinced). On the other hand, if it had been "inferred" then the court should have actually gone ahead and verified whether inference was right. In that case "however" should not have been used. Probably "For verification" should have been used. The difference between "infer" and "imply" is that imply is indicative from the agent and infer is conclusive based on something related.

Combing all these arguments, C becomes best option.

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.

E *It is important to understand that what is happening presently is direct/indirect result of 'something' happened in the past. Hence, to understand present (candidate getting high rank) we have to go into the past (What Murali did previously). In other words we don't have all information about past. For example, Murali might have been born more intelligent (or may have come from a background that gives him advantages for getting high rank……there are many other possibilities. Hence, it if difficult to conclude that statement 2 "contradicts" statement 1. In other words, Statement 1 still holds despite statement 2 sounding "contradictory".*

Thus, Option E is the correct answer.

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

12. 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.

E *Correct Option is E (refer the last line of last paragraph). This is straight from the passage.*

13. 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.

B - *Option C conveys that 'someone' (in this case 'destiny') has struggled and become successful. Destiny is not like a human being that struggle. Struggle is possible for the protagonist. But, there is no mention that protagonist has been successful in the struggle.*
- *Option D is also wrong as nowhere the protagonist has made 'mockery of destiny'.*
- *Option E is also not the correct answer because it is not protagonist versus enemy but it is protagonist versus 'his destiny' (destiny need not be enemy, but it can be powerful). In other words, destiny is not an enemy but something beyond the control of a person/something very powerful.*
- *Option A can be close as destiny can make a person laughing stock as it is very powerful. But it is not always true.*
- *Option B is true all the time. The phrase 'sarcasm of destiny' in the passage means that life chances of the protagonist is not' his choice', rather external force like destiny control the chances. However, even if a person succumbs to external force like destiny that might not make him a laughing stock (Option A). Hence, Option B is the correct answer.*

14. 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

C *Question is about 'CHANGE of mood of the protagonist' that is SPECIFIC*

- *Option A is a generic mood swing and not specific.*
- *Option B talks about two mental states and there is no swing (despair and hope NOT despair to hope) 'from one to other'. Moreover, 'hope' fails to capture the determination.*
- *Option D is close but it fails to capture the state of mind of the protagonist. Moreover, it is also generic like Option A.*
- *Option E captures the mood swing but not in sync with the passage.*

Hence, Option C is the correct answer.

15.

Words	Related Words
i. Counterpane	a. Burial
ii. Dungeon	b. Bed
iii. Guillotine	c. Execution
iv. Shroud	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

A

- *Counterpane – cover*
- *Dungeon – Jail/prison*
- *Guillotine – an equipment for beheading*
- *Shroud – Burial garment*

Hence, Option A is the correct answer.

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

16. 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.

A *It is a straight question. The passage clearly mentions that in the initial days, learning is piecemeal (First sentence of the last paragraph). Hence the answer is Option A.*
- *Option B is wrong as the passage does not talk about pleasure or pain of learning.*
- *Option C is incorrect as new connections make reality more intelligible to us.*
- *Option D is incorrect as learning would be made difficult if the subjects cannot be "related to each other"*
- *Option E: there is no mention of "happiness" in the passage.*

17. 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

B *Statement II and III are mentioned in the passage (refer paragraph 3). Statement I and V go against the essence/core argument of the passage (refer paragraph 1 and paragraph 2). Any option that contains statement I or V would be wrong. Hence, A, C, D, E are rejected.*

Thus, Option B is the correct answer.

18. 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.

E *The passage clearly suggests that it connections across multiple neurons (many a mickle) makes learning (makes a muckle) possible in the long run. So, Option E best captures the essence of the passage i.e. multiple neuron excitation of neurons lead to learning.*

- *Option A is partially correct because learning takes time, but is partially wrong because it does not capture that learning is cumulative and connected. Further, there is no mention of learning being an interaction between 'master/teacher/agent' and pupil.*
- *Option C is not relevant as there is no ultimate objective (ends well) of learning described in the paragraph).*
- *Option D is contradictory to the idea of the passage.*

19. 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.

B *The father being older is likely to have more related (paragliding) neurons excited (as excitation would have started earlier) and hence is likely to outperform his son in learning paragliding (unless the father has not been exposed to paragliding and son has been - there is no hint about this in the passage). Refer to paragraph 5 for the logic.*

Hence, Option B is the correct answer.

- *Option A is possible, but 'not always' as there are chances that father would carry more 'adjacent neurons' (to paragliding).*
- *Option C can be the right answer in some cases if the father did not have any 'adjacent neuron' (to paragliding) (highly unlikely).*
- *Option D In this case, the father is likely to learn more because he would have 35 years of experience and the son would have only 10 years.*
- *Option E - Since the father has lived longer, highly unlikely that father would not carry*

a 'paragliding related neuron'.

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

20. 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.

D *It is mentioned that orchids do not end up as sociopath, but they can thrive in some conditions. The alternate hypothesis (in the second paragraph) clearly mentions that in a right environment orchids do flourish. So, Option D is the correct answer.*

- *Option A talks about "insufficient". It is mentioned that there are less "orchids" but not that they are insufficient (inadequate). On the contrary, it is stated that "orchids" and "dandelions" both complement each other to become sufficient.*
- *Option B is incorrect as orchids can be found in any environment but they only thrive in "greenhouses/anaesthetised conditions".*
- *Option C: Orchids can end up being weaker, but not necessarily always (as they can thrive in some conditions).*
- *Option E: might not be true always (same as in previous options).*

21. 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.

D
- *Option A- not necessarily right as sometimes 'orchids' can flourish.*
- *Option B - adaptability is more a characteristic of 'dandelions' than of orchids.*
- *Option C – under these conditions, orchids may end up being "sociopaths" and hence it is wrong.*
- *Option E - success depends on genes as well as the environment, as mentioned in the passage.*

So, Option D is the correct answer as it is clearly mentioned in the passage.

22. 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

A *Diathesis: means susceptibility to diseases (refer paragraph 2).*

So, Option A is the correct answer.

23. 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.

E *This question mentions only one of the two causes - the environment. The two causes are genes and environment. The two causes mix up to determine the consequence (sociopath/normal). In other words, the question is silent about second cause i.e. "gene".*

Another way to state the same would be as follow:

According to this passage two conditions are necessary to make any inference regarding the children typology (whether dandelion or orchid): genes and environment for a person. In other words, if one is raised in a particular environment that does not definitely make the person an orchid or dandelion. Hence, no conclusion can be drawn.

Correct answer is Option E.

Analyse the following passage and provide appropriate answers for questions 24 to 26 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.)

24. 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

C *Air is obvious answer because this is the only public good because 'individuals cannot be excluded from use' of air. All others belong to private goods category according to the essence of the passage (refer the note for clarification).*
So, Option C is the correct answer.

25. 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.

A - *Option A is the correct answer. The passage mentions that public intervention is **a** solution (this is not '**the solution**') only when 'markets fail for pure public goods' and not all the time. Hence, this cannot be concluded from the passage.*

- *Option B is straight from the passage (second line) i.e. market failure problems might not arise in perfect/competitive markets.*

- *Similarly Option C (fourth line), D (fifth line) and E (fifth line) are also stated in the passage, directly or indirectly.*

26. 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'.

C *Statement 1 narrates an incidence of market failure of a public good (water bodies) and how factories misuse these goods as there are inadequate incentive mechanisms. Statement 2 offers a solution to the same by suggesting a 'regulation' through a government body can possibly solve the problem.*

So Option C is the right answer.

- *Option A is not an answer as statement 2 does not corroborate statement 1.*
- *Option B Dumping waste is not an example of "adverse selection".*
- *Option C is not a right answer as Statement 1 is an example of misuse of public good. Again Statement 2 does not refer to private good.*
- *Option E "factory" is not an example of principle.*

Analyse the following passage and provide appropriate answers for questions 27 and 28 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.

27. 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.

E *First paragraph describes the technique of brainstorming.*

- *Option A is wrong as second paragraph does not support the first but second paragraph goes into the reasons of why brainstorming works and its advantages.*
- *Second paragraph is not contradicting the first paragraph. Hence, Option B and C are also not correct. In fact, second paragraph elaborates the "pitfalls of not using brainstorming".*
- *Option D is again incorrect as the second paragraph does not "complement" the first but explains the advantages.*

Hence, Option E is the correct answer.

28. 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.

D

- *Option A talks about looking at students from multiple perspectives. It does not talk about asking multiple students (the hallmark of brainstorming). Though result of both can be same.*
- *Option B can be rejected on the basis of same logic as provided in the A above. Moreover, it says that playing multiple roles makes a person an effective leadership.*
- *Option C is like comparing apples and oranges. Success in swimming and success in cricket are not comparable. It would have been a correct option had India been using brainstorming in cricket (and not other nations) and not in swimming. Cricket and swimming are not comparable.*
- *Option E compares large versus small firms. Large firms might generate more ideas, only if, more number of employees from different departments/perspectives is involved in the brainstorming process but Option E is not hinting about the 'multiple perspectives' angle. Nowhere is it mentioned that large organization use brainstorming by involving employees from different functions. Though there is higher potential of using brainstorming in the large organization.*
- *Option D is the right answer as inputs has to be provided by employees from many*

departments (hallmark of brainstorming).

Section B: Decision Making and Analytical Reasoning

Answer questions 29-31 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

29. 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?

A. Mr. Patel would soon be transferred to another department.
B. Last week, Mr. Dipangshu has been assigned to a new team in the same project.
C. Three days back, Mr. Dipangshu has been assigned a new project similar to his final year engineering project.
D. His friend has been hospitalized for the last three months.
E. Failing to perform in the client meeting might further complicate things.

E
- *Option A: Problem may be because of team or individual (Dipangshu). So, transfer of Patel may not solve the problem. The next HR Director would do the required official follow-up.*
- *Option B: Problem may be because of team, or Dipangshu. If the problem is because of the team, it might (though not necessarily) get resolved in a new team. But if the problem is because of Dipangshu, it would persist. Even if the problem is because of team, there is no guarantee that new team would not have such problems. .*
- *Option C: Change in the project may not change the team or individual and hence problem may not get solved. There is no guarantee that the new project would not have same problems or same team.*
- *Option D: Unrelated to the argument.*
- *Option E: Failure to perform the duty would lead to further complications. This is the least*

that he can do at this juncture and this is the only thing that can be controlled by Dipangshu to avoid further negative consequence. "We can only control the controllable". Hence, this is the best option.

30. 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?

A. Talk to Mr. Patel and highlight the initiatives he has taken but at the same time start applying for other jobs.
B. Reject the offer from the start-up. Use the next three months to find a better job, but continue in the present job.
C. Resign from this organization right now.
D. Accept the offer, only if the start-up gives a salary hike, else keep prospecting.
E. Accept the offer with a request to give him a 10% salary hike.

E

- *Option A: Mr. Patel does not seem interested to talk (as given in the passage above and as perceived by Dipangshu). Hence, this might not sort out the problem. Further, if we discard the first part of the option then it would be similar to Option B.*

- *Option B: This is a viable option but it has a lot of uncertainty (he is sensing that he might be sacked three months down the line). Further, there is no surety of getting a new job, leading to further uncertainty. He is keen to work (as mentioned on the situation 'he cannot think of a life without a job').*
- *In Option C he loses his present job and nothing else is mentioned (probably we can assume that he will join the start up without any negotiation).*
- *Option D is good choice but not as good as E. If there is no salary hike then it would be similar to Option B.*
- *Option E is the best option. This is the safest option with comparable salary and if he gets a salary hike then it would be win-win for him and it would be better than Option D. However, if the start-up doesn't honour his request then it would be equivalent to Option C.*

31. 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.

I. Talk to Mr. John about Dipangshu and convey to him that losing a bright employee would cost the organization dearly.

II. Catch up with Mr. John during coffee break and convey that Dipangshu has a very good track record.
III. Chat with Dipangshu during coffee break.
IV. Catch up with Dipangshu during coffee break and convey that the organization values him.
V. 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?

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

D *The intention of HR Director is to retain Dipangshu (as it is good for organization as well because organization does not lose a competent employee), by bring three together to amicably sort out the issues. Thus, one statement has to be picked from the first two statements; one statement has to be picked from Statements III and IV. Statement V is a must as no solution can be found without three of them coming together.*

Out of Statements III and IV, Statement IV is a better option as statement III does not specify an action. Hence, Statements IV and V should be part of the correct option along with either Statement I or II. So, from the available choices, Option D is the best answer.

Answer questions 32-33 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.

32. 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

D - *Proposal I indicates that cut off would be based on combined score and hence students might maximise their score by attempting 'formula-based problems'.*

- *Proposal II indicates that both parts would have separate cut offs and hence, most likely, students would be forced to attempt questions from both the sections. But in extreme cases, all students can choose to attempt very few (or zero) questions from 'application-based problems'.*

- *Proposal III gives additional incentive to attempt 'application-based problems'. In a way, it might avoid the extreme outcomes of Proposal II (as mentioned above).*

- *Proposal IV is not 'fair' to the students as they have no idea about the evaluation.*

Combining Proposal II and III is best option among the four proposals mentioned above. Hence, Option D is the best answer.

33. 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

E *Question: to be better prepared for the examination*

Statement III and VI are unrelated to the examination and relate to post examination stages of candidate's life. Information provided on these dimensions would not be helpful 'to be better prepared for the exam'. Whereas, all other information are relevant.

So, Option E is the correct answer as it excludes both III and VI.

Answer question 34 on the basis of information given in the following case.

34. 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

C *Question: 'PREFERRED SEQUENCE OF ACTIONS' to 'REDUCE CARBON FOOTPRINTS'. So, the correct option should have a correct logical sequence as well as reduce the actual carbon footprints.*

To have maximum impact, there should be concrete changes/actions, which can be initiated after a

fact finding (which starts from suggestion V). Hence, Option A and Option B are not correct. Option D is also not correct as "III" should not come after "I". Option E as well as C are both logically sequenced.

Next issue is reduction of carbon footprints. Option E talks about seminar. Seminar might reduce carbon footprints indirectly by increasing awareness. Administration has already conveyed this to campus residents. Organizing a seminar would have only incremental benefit, at best. Which of the options can reduce maximum amount of carbon footprints? Option C is the best answer as it contains concrete actions.

Answer questions 35-38 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. Prodigal. Mr. Prodigal is the prime accused in the brutal murder of Mr. Victim, an opposition party leader. Mr. Prodigal 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.

35. 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. Prodigal 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.

C *Here it is important to note: Any action against Mr Prodigal would affect Mr Loyal which in turn may affect the party. Similarly, any direct action against Mr Loyal may again affect the party. In other words, any direct or indirect action against Mr Loyal may affect the party.*

- *Option A may affect party negatively because party may be perceived as inactive/ unethical. However, it is good for Mr. Loyal.*
- *Option B talks about suspending Mr. Prodigal. Mr. Loyal has soft corner for his son and he may not like this option. In a way, it may be good for the party but Mr. Loyal may not like Mr. Prodigal to be suspended, when charges are yet to be proved.*
- *Expelling Mr. Loyal for something that Mr. Prodigal has done may be unfair, unless charges are proved. Further, expelling Mr. Loyal from the party would alienate him. It is the worst action that can be taken against him and it might lead to a split within the party (as mentioned in the passage). Expelling indicates that chances of Mr. Loyal coming back to the party would be very low. Hence, Option C is the correct answer since this is not good for both of them.*

- *Banning Mr. Loyal from entering party premises (Option D) would be similar to previous argument but the adverse impact would be less than Option C (both for the party and Mr. Loyal) as bans are temporary.*
- *Initiating an internal inquiry would not impact either way (Option E). Neither it would impact the party/Mr. Loyal badly nor would the party gain significantly.*

36. 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. Prodigal from the party with immediate effect to maintain party's clean image.
C. Initiate an internal inquiry to find the truth.
D. Suspend Mr. Prodigal 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. Prodigal from the party with immediate effect.

D

- *Option A: Maintaining status-quo would be perceived as inactive. Hence, it may receive adverse media reactions which would harm the party reputation.*
- *Option B: Mr. Loyal may not like the option of expelling Mr. Prodigal from the party with immediate effect. This might improve the party reputation but Mr. Loyal would get affected as a consequence party might also get affected. So this is not the correct option.*
- *Initiating an internal inquiry would not help the party to improve its image (which is the main concern – as mentioned in the passage). This internal inquiry committee does not make sense when matter is sub judice (assuming judiciary is fair). Fate of Mr Prodigal is depending on court verdict not on the decision of internal inquiry committee.*
- *Option D gives fair chance to Mr Prodigal and indirectly to Mr Loyal as well. Furthermore, this would ensure a good image among public and media that party adheres to the decision of the court. And at the same time it conveys a message that party is not unfair to the members during crisis time and would boost the morale of the party members.*
- *Option E would adversely affect Mr. Loyal and hence, party.*

37. 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

B - *Statement I, II, & III are against Mr. Loyal and Option IV and V are in favour of Mr. Opportunist. Statement II talks about how party can improve image but not related to the candidature of Opportunist. Similarly Statement III talks about a post-election scenario. So, it is not pushing his candidature at this juncture. Statement V is irrelevant for Opportunist's candidature.*

- *Statement I directly conveys that Mr. Loyal might not have high chance of winning and Statement IV says how Opportunist can be ideal replacement of Loyal in terms of trustworthy followers.*

So combination of I and IV (Option B) would be the correct answer. This option is having both anti-Loyal and pro-Opportunist arguments.

38. 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.

A *Question asked on : Immediate political career*

- *Option A gives him chance to stay afloat. 'Chance of winning is high' (as mentioned in the option). Hence, it is better than Option D and this is the correct option.*
- *There are no obvious benefits from Option B, C and E for his immediate political career. These might be beneficial (except Option B) in the long run but not in near future. In case of Option E there is no guarantee that his close associate will remain loyal to him.*
- *Option D is a viable strategy but chances of winning is low and hence this option is less likely than Option A.*

Answer question 39-41 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) across three categories. Furthermore, the number of only Quantitative-oriented electives is same as only Job-oriented electives, but less than the number of only Grade-oriented electives. Each elective has at least one registration and there is at least one elective in each category, or combinations of categories.

Answer Table:

			# of Only J type elective is 3			**# of Only G type elective is 2**
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Only Q	1	2	3	1	2	1
Only J	1	2	3	1	2	1
Only G	8	6	4	5	3	2
QJ (but not G)	1	1	1	2	2	3
QG (but not J)	3	3	3	4	4	5
JG (but not Q)	5	5	5	6	6	7
QJG	1	1	1	1	1	1
How many possible answers for G-type courses?	17	15	13	16	14	15

39. 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

B *There are 6 possible answers for G-type courses (i.e. Only G+ QG + JG + QJG) but Scenario 2 as well as Scenario 6 gives the same value (15). Thus, possible answer for G-type electives would be 5. So, the correct Option would be B.*

40. 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.

C *Based on their preferences, Simran should take 5 JG and 2 Only-J type courses and Raj would take 5 JG and 2 Only-G type courses. They would have 5 common courses. Hence, the correct Option would be C.*

41. 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.

A *Vijay can take a combination of 7 courses from JG and Only J type. Raj would take 2 Only-G type courses and 5 QG type courses. So they can completely avoid each other. So Option A would be the correct answer.*

Answer questions 42-44 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.

42. 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?

A. Investment is warranted only when benefits outweigh costs.
B. Technology investments give higher earnings in future.
C. Investment in technology leads to reduction of costs in the long run.
D. Technology risks can be controlled.
E. Business is all about taking risky decisions.

A
- *Only Option A reduces Arbit's enthusiasm. All others clearly favour his decision to go ahead with the investment decision.*
- *Statement B is in favour of Mr. Arbit, as technology investments give better results→ green signal*
- *Statement C is also in favour of Mr. Arbit, technology invst reduces cost→ green signal*
- *Statement D and E also are in favour of Mr. Arbit, "risk controlled/risks have to be taken"-→green signal*

43. 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?

A. All other competitors are aggressively investing in risky technologies.
B. 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.
C. Preliminary studies indicate that success rate of the technology is 85%.
D. The R&D team of ITS is working to counter any possible downside of the technology.
E. Business is all about taking risky decisions.

C
- *Option A is not a choice because one cannot be driven by competitor's actions as competitors may be wrong. What is best for competitors may be good for the company.*
- *Option B is restatement of facts from the passage. It does not mention what are the chances of success. It could be 1%, it could be 99%.*
- *Option D indicates that there is a possibility of failure. Moreover, it indicates that 'R&D team of ITS is working to counter' but there is 'no guarantee' (in the option) that they would be able to do so. They may be able to do it but they can fail as well.*
- *Option E is generic and doesn't add much value to his sales pitches. Rather it is sensitizing them regarding the uncertainty related to this investment. It does not mention, "How risky". Someone can take decision with 20% risk, while others may not take the decision even at 80% probability.*

- *Option C is the only answer which strongly hints about the potential success of this technology and low chances of failure (roughly 1 out of 6 cases i.e. 15%).*

44. 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)

A. 231,200 million rupees
B. 331,000 million rupees
C. 400,510 million rupees
D. 431,000 million rupees
E. 464,100 million rupees

B

Answer Table:				
Year	*Forgone earnings of Arbit*	*Forgone earnings of Boring*	*Difference*	*Amount at the end of Five years*
1	*100,000*	*100,000*	*0*	*0*
2	*100,000*	*100,000*	*0*	*0*
3	*100,000*	*0*	*100,000*	$100,000\times(1.1)^2$
4	*100,000*	*0*	*100,000*	$100,000\times(1.1)$
5	*100,000*	*0*	*100,000*	*100,000*
			Total	***331000***

Option B is the correct answer.

Answer questions 45-48 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.

45. 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*)

A. If sales volume of patented drugs in India is 43%, the sales volume of generic drugs in India will

be less than 43%.

B. 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%.

C. If the sales volume of patented drugs in India is 54%, the sales volume of generic drugs in foreign countries will be above 54%.

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

E. 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%.

D

Main Passage & Question 42:		
	Patented < 50%	*Generic > 50%*
India < 50%	*Patented India*	*Generic India*
Foreign > 50%	*Patented Foreign*	*Generic Foreign*

Option A: Not possible

	Patented < 50%	*Generic > 50%*
India < 50%	*43% (given)*	*< 7%*
Foreign > 50%	*< 7%*	*> 43%*

Option B: Not possible

	Patented < 50%	*Generic > 50%*
India < 50%	*< 24%*	*>50%-Generic (Foreign)*
Foreign > 50%	*>50%-Generic (Foreign)*	*>24% (given)*

Option C: Patented drugs in India must be < 50% (as total sales in India is < 50%).

Option D:

	Patented < 50%	*Generic > 50%*
India < 50%	*29% (given)*	*< 21%*
Foreign > 50%	*< 21%*	*> 29%*

Option E: Generic drugs in India must be < 50% (as total sales in India is < 50%).

Hence, Option D is the correct answer.

46. 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.

I. Invest in development of new drugs.

II. Increase sales of cough syrup in the rural markets.

III. Try and cut costs.

IV. Recruit more medical representatives in the rural areas.

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

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

A *Question asked: Long term consequences*

Statement I is the best option if we consider the long term prospect of the business. Statement II is clearly unethical and unethical actions might have some short term benefits but are least appropriate for long term. Statement III can boost performance in the near future. Statement IV might also have a negative connotation if we assume that LSP is recruiting more employees to sell cough syrup in the rural areas.

Thus, Statement I should come first if we consider 'to improve business in the long run'. Moreover, Statement II should not come before Statement I as well as III from the long run perspective). Hence, Option A is the correct answer from the available choices.

47. 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?

A. Giving a salary hike to Mr. Jose with a promise to transfer Mrs. Jose to Luxembourg in the near future.
B. Giving Mrs. Jose option to work from home while in Luxembourg so that she can be with Mr. Jose.
C. Giving Mr. Jose option to work from India for the time being so that he can be with Mrs. Jose in India.
D. 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.
E. Asking Mr. Jose to accept the offer right now but give him up to six months to join Luxembourg office.

B *Question: Best solution for organization should also address the couple's concern.*

- *Option A is only a promise and salary hike does not solve the problem directly, as organization needs to find solution immediately without compromising couple's need.*
- *Option C is not viable as work in Luxembourg is very important and a competent person like Mr. Jose has to be there in Luxembourg (as mentioned in the passage).*
- *Option D is less acceptable as it assumes that Mrs. Jose's work is not important (which she as well as her husband might not accept).*
- *Option E just postpones the problem, when solution requirement is immediate.*

Option B is the correct answer as it is suitable to all stakeholders. Organization gets the work done. Mr. Jose and Mrs. Jose stay together and Mrs. Jose does not lose her job.

48. 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

E *Question: the SEQUENCE of IMMEDIATE actions that maintains Work (i.e. job/career) Life (i.e. family – to stay with her husband) balance for MRS. KHAN*

- *Statement 1 suggests that "wife" should give up the work i.e. sacrifice her career at least in the near future.*
- *Statement II is similar to Statement 1 as "wife" is supposed to sacrifice her career (for husband's career) in the short run and sacrifice their family life in the long run (because she has to stay alone).*
- *Statement III is a valid option as she is requesting Mr. Khan to find a job in India. If he agrees and and is able to find a suitable job, they can stay together without Mrs. Khan sacrificing her*

career. Thus, work-life balance might be maintained (this can be immediately requested by Mrs. Khan).

- *Statement IV is uncertain as there is no guarantee of getting a job in the US. Her career may be jeopardised.*
- *Statement V is valid action as she can always make a request, if it is granted, the couple would be together. Thus, work-life balance can be maintained like Statement III. Further, it would be viable follow-up (sequential) action, if Statement III doesn't work.*

Hence, Option E (which combines III and V) is the best possible sequential option.

Answer questions 49-51 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.

49. 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

C *Question: statements favouring NOT USING organic vegetables*

- *Statement I states that awareness is low and hence it conveys that using organic vegetables in Panipat might be a premature step.*
- *Statement II indicates that there is a risk involved in implementing the Connaught place model in Panipat but the tone conveys that businesses willing to take the challenge can do it. In other words, he is not saying in favour of 'not using organic vegetables'.*
- *Statement III says that a few restaurants are already using organic vegetables but the argument here is that using Organic Vegetables is not going to be the unique selling point for them. Hence, they might not get any advantage by using organic vegetables. Why change something that is already doing well?*
- *Statement IV implicitly indicates that Panipat customers might not accept high prices of dishes (due to uses of organic vegetables). Use of organic vegetables might reduce the profits.*
- *Statement V states that if premium vegetables are not available then it might not be convenient to procure them on a regular basis. This is increase the complexity.*

Hence, Option C is the best answer.

50. 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.

D *First businessman says that customers are very different. That indicates business at Panipat should be somehow different from Connaught place.*

Second businessman says that customers are happy with Ram, which means identity of business in

Panipat should be ideally tied with 'Ram'.

Third businessman says that ingredients at Panipat are not same as Connaught place but taste is good. It indicates both businesses have their own advantages and should be treated differently.

Fourth businessman says that in future customers at both the places might have similar tastes. In other words, it suggests that in future the two business models might be alike.

- *Option A and E may not be viable as Kishan is not interested to go to Panipat (as mentioned in passage).*
- *Option B is not the correct answer (as per passage 'giving a freehand to Ram might have long term negative consequences').*
- *Option C may not be best as Panipat customers like Ram (Businessman 2).*
- *Option D is the only answer that can satisfy the opinions expressed by all four businessmen.*

51. 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.

B *Question asked: Maintaining BOTH quality and growth*

- *Option A would face resistance from Ram as he is not keen to use organic vegetables. He might be reluctant about this idea. So, it can only be done in the absence of Ram.*
- *Option C means that loss of revenues and hence growth.*
- *Option D: Kishan would be reluctant to go to Panipat (as mentioned in the situation passage).*
- *Option E: New person has to replace Ram (Hence for this solution, Ram has to leave Panipat). And there is no surety that new person would be a success (both in terms of pursing growth and maintaining quality).*
- *Option B is the best option because Mohan can drive Panipat branch and probably Kishan can handle Delhi branch. Or, Ram can join Kishan.*

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

B *This series has 19 negative numbers, where all the numbers in the series is 2 less than previous number. The summation of the series = (19/2)×(– 64 – 100) = – 1558*

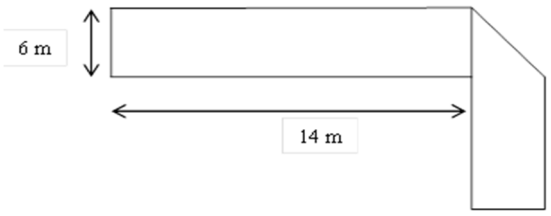
53. Ramesh plans to order a birthday gift for his friend from an online retailer. However, the birthday coincides with the festival season during which there is a huge demand for buying online goods and hence deliveries are often delayed. He estimates that the probability of receiving the gift, in time, 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

E *The probabilities of not receiving the gift from retail A, B, C and D are 0.4, 0.2, 0.1 and 0.5, respectively. Then probability of receiving gift from at least one retailer = {1 - (0.4×0.2×0.1×0.5)} = 0.996*

54. 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

C *Folded part was a square. It means the side of the square is 6. Hence the right angle triangle would have area of 18 (i.e. ½ ×6×6). Square would have two such right angle triangle, one of which is missing. If we add the area of the missing triangle to area of existing figure, we get (144+18=162).*

55. 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%

D *Assume manufacturing cost = 100 and manufacturer profit = 100x%*
Then MRP = 100(1 + 0.55) = 155
Retailer price = 155×0.9
Now, 100(1 + x)×(1 + 0.23) = 155×0.9
Then, x = 0.134
Hence, Manufacturer profit = 13% (nearest integer)

56. 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

D *Volume of the cylinder = $\pi r^2 h$ and Flat surface area = $2\pi r^2$*
Volumes of two cones are $(1/3)\pi r_1^2 h$ and $(1/3)\pi r_2^2 h$ (as height of the cones are same as cylinder)
Combined flat surface area of two cones = $\pi r_1^2 + \pi r_2^2$
Given, $(1/3)\pi r_1^2 h + (1/3)\pi r_2^2 h = \pi r^2 h$
Or, $\pi r_1^2 + \pi r_2^2 = 3\pi r^2$
Therefore, increase in flat surface area = $(\pi r_1^2 + \pi r_2^2 - 2\pi r^2)/ 2\pi r^2$
= $(3\pi r^2 - 2\pi r^2)/ 2\pi r^2$
= ½ = 50%

57. 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.

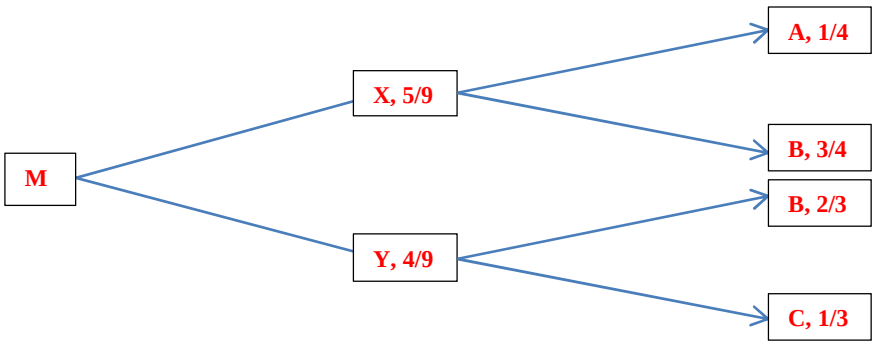
A. Rs. 70,400
B. Rs. 125,400
C. Rs. 140,800
D. Rs. 235,400
E. None of the above

B *Side of the square field with perimeter 200 ft. = 50 ft. then, length of diagonal = $50\sqrt{2}$ ft.*
For least cost of construction, inner radius of the circular road = $25\sqrt{2}$ ft.
Then, outer radius = $25\sqrt{2} + 7\sqrt{2} = 32\sqrt{2}$
The area of the circular road = $(22/7) \times \{(32\sqrt{2})^2 - (25\sqrt{2})^2\} = (22/7)\times 2\times(32 + 25)\times(32 - 25) =$ 2508 sq. ft.
If per sq. ft. cost is Rs. 100, then 50% of total cost = 250800/2 = 125,400

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 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?

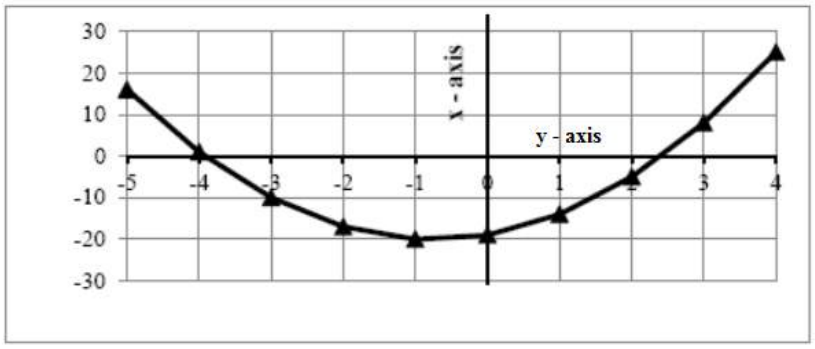
A. 328 units
B. 368 units
C. 392 units
D. 616 units
E. None of the above

B



Then, fraction of B in Product M = (5/9)×(3/4) + (4/9)×(2/3) = 77/108
In 864 units of Product M, amount of B = 864×(77/108) = 616
In the final mixture 50% is B. Then amount of final mixture = 616×2 = 1232
Water added = 1232 – 864 = 368

59. 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. $x = 2y^2 + 3y - 19$

E *In the graph, y-axis is horizontal and x-axis is vertical (opposite of convention). The graph cuts y-axis (x = 0) at two places. Hence, it will be quadratic equation for y. At y = 0 (x-axis), the value of x is near to – 20 (from the graph).*
Possible equation → $x = 2y^2 + 3y - 19$

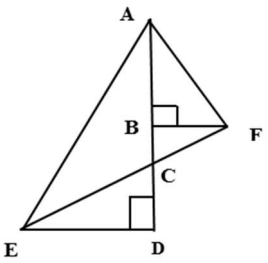
60. Two diagonals of a parallelogram intersect each other at coordinates (17.5, 23.5). Two adjacent points of the parallelogram are (5.5, 7.5) and (13.5, 16). Find the lengths of the diagonals.

A. 15 and 30
B. 15 and 40
C. 17 and 30
D. 17 and 40

E. Multiple solutions are possible

D *Diagonals of the parallelogram intersect each other at mid-points.*
Now, the distance between points (17.5, 23.5) and (5.5, 7.5) = 20
Similarly, the distance between points (17.5, 23.5) and (13.5, 16) = 8.5
The lengths of the diagonals = 17 and 40

61. In the diagram below, CD = BF = 10 units and ∠CED = ∠BAF = 30º. What would be the area of triangle AED? (Note: Diagram below may not be proportional to scale.)



A. 100 × (√2+3)
B. 100 / (√3+4)
C. 50 / (√3+4)
D. 50 × (√3+4)
E. None of the above

D *CD/ED = tan 30º = 1/√3, Then ED = 10√3*
Again, BF/AB = tan 30º = 1/√3, Then AB = 10√3
Both BF and ED are perpendicular on AD, thus BF||ED, then, ∠BFC = ∠CED = 30º
Then, BC/BF = tan 30º, then, BC = 10/√3.
Finally, Area AED = ½ ED×AD = ½ ×10√3×(10 + 10/√3 + 10√3) = 50×(√3 + 4)

62. 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 × 0 + 1500 × 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

A

Income Slab	*Tax rate*	*Persons for min. tax*	*Minimum tax per person*
≤ 500	*Nil*	*5*	*0*
> 500 to ≤ 2000	*5%*	*4*	*0 + (0 + Δ)×0.05*
> 2000 to ≤ 5000	*10%*	*3*	*0 + (2000 – 500)×.05 + (0 + Δ)×0.1*
> 5000 to < 10000	*15%*	*3*	*0 + (2000 – 500)×.05 + (5000 – 2000)×.1 + (0 + Δ)×0.15*

Total minimum tax = 3×1500×0.05 + 3×(1500×0.05 + 3000×.1) + Δ = 1350 + Δ

Income Slab	*Tax rate*	*Persons for max. tax*	*Maximum tax per person*
≤ 500	*Nil*	*3*	*0*
> 500 to ≤ 2000	*5%*	*3*	*0 + (2000 – 500 – Δ)×0.05*
> 2000 to ≤ 5000	*10%*	*4*	*0 + 1500×.05 + (5000 – 2000 – Δ)×.1*
> 5000 to < 10000	*15%*	*5*	*0 + (2000 – 500)×.05 + (5000 – 2000)×.1 + (10000 – 5000 – Δ)×0.15*

Total maximum tax = 3×1500×0.05 + 4×(1500×0.05 + 3000×.1) + 5×(1500×0.05 + 3000×.1 + 5000×.15) – Δ = 225 + 1500 + 5625 – Δ = 7350 – Δ

63. 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

C *Lowest possible value of denominator is 1 i.e. 1, 2, 23, 25 and highest would be 51.*
.

64. 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

C *Given, $f(x^2 - 1) = x^4 - 7x^2 + k_1$*

If $x^2 = 1$, $f(0) = -6 + k_1$
Also, $f(x^3 - 2) = x^6 - 9x^3 + k_2$
If $x^3 = 2$, $f(0) = -14 + k_2$
Equating, $k_2 - k_1 = 8$

65. 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

C *From the start of 2004 to the start of 2007 = 3 years and from the start of 2004 to the start of 2010 = 6 years*
Let, Principal amount = x and annual interest rate = 100r%
Then, $x(1 + r)^3 = x + 10000$ and $x(1 + r)^6 = x + 25000$
Take, $(1 + r)^3 = a$
Then, $xa = x + 10000$, and $xa^2 = x + 25000$
Or, $x(a - 1) = 10000$, and $x(a^2 - 1) = 25000$
Then, $x(a + 1)(a - 1) = 25000$
Or, $(a + 1) = 25000/10000 = 2.5$
Then, $(a - 1) = 0.5$
Finally, $x = 10000/0.5 = 20000$

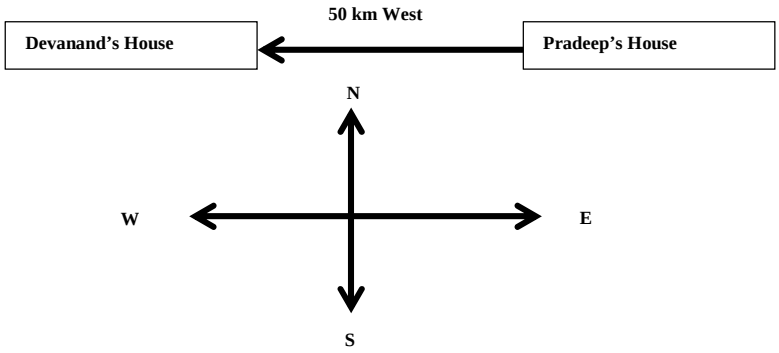
66. Devanand's house is 50 km West of Pradeep's house. On Sunday morning, at 10 a.m., they leave their respective houses.

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

A



Scenario I: We are assuming that the minimum distance between the two would be 40km after x minutes. Hence, $(50 - 3x)^2 + (4x)^2 = 40^2$
Or, $2500 + 9x^2 - 300x + 16x^2 - 1600 = 0$
Or, $25x^2 - 300x + 900 = 0$
Or, $x = 6$
Hence, the minimum distance between the two can be 40 km in Scenario I.

Scenario II: Since, Devanand walks South and Pradeep walks East, the distance between the two would keep on increasing. Hence, minimum distance cannot be 40 km in Scenario II.

Scenario III: Since, Devanand walks West and Pradeep walks East, the distance between the two would keep on increasing. Hence, minimum distance cannot be 40 km in Scenario III.

Hence, Option A is the correct answer.

67. 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.

E *If these 7 numbers are arranged in ascending order, they will be 6, 8, 12, 13, 14, 20, and 22. If the median of 11 numbers is 15, then 15 is the* 6^{th} *number. Hence, all 3 remaining numbers are above 15.*

From Statement I:

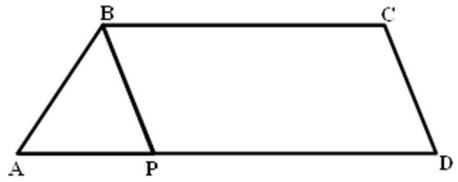
Average of 4 smallest integers is 9.75. Thus, average of 4 largest integers = 9.75 + 13.25 = 23.
Summation of 4 largest integers = 92.
To find largest possible integer, the 7^{th} and 8^{th} numbers should be minimum i.e. 16 and 17.
Thus, 17 + 20 + 22 + x = 92. Or, x = 33
Statement I alone is sufficient to find the solution.

From Statement II:

Average is 16. Then summation of 11 numbers = 176. Now, sum of 8 available numbers = 110 and sum of 3 unknown numbers = 66.
To find largest possible integer, the 7^{th} and 8^{th} numbers should be minimum i.e. 16 and 17.
Thus, 16 + 17 + x = 66. Or, x = 33
Statement II alone is sufficient to find the solution.

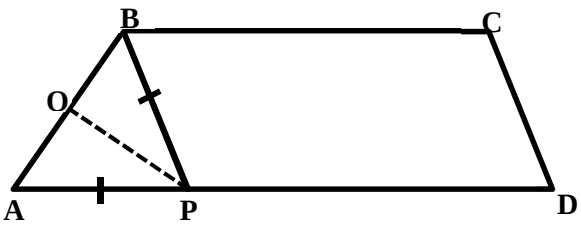
Thus, correct option is E.

68. 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 ∠ABC, given 2∠DAB = ∠BCD.



A. 4/5
B. 16/25
C. 5/6
D. 24/25
E. A single solution is not possible.

A



Given BC:AD = 4:5
If BC = 4x, AD = 5x; also PD = 4x and AP = x
Now, ∠BCD = ∠BPD = ∠BAP + ∠ABP = 2∠DAB. Then, ∠BAP = ∠ABP → AP = BP = CD.
Assume AB = y
Then perimeter of trapezoid = y + 4x + x + 5x = 1120, or, 10x + y = 1120.
Perimeter of parallelogram = x + 4x + x + 4x = 1000, or, 10 x = 1000, or, x = 100. Then, y = 120.
Now, Sin ∠ABC = PO/BP
As OB = 60 and PB = 100, then PO = 80
Then, Sin ∠ABC = 80/100 = 4/5

69. 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

C *LCM of 3, 4, 5, 6 = 60*
The number will be 60k + 2, where k is an integer.
If the number is divisible by 11 then (60k + 2)/11 can be rearranged as follows: 55k/11 + (5k + 2)/11
The number is divisible by 11. So, 5k + 2 = 11 i.e. k = 4
As k is an integer, the next values of k is 4 + 11 = 15, 15 + 11 = 26, 26 + 11 = 37, 37 + 11 = 48 and 48 + 11 = 59 (for 6th smallest number)
The answer is = 60×59 + 2 = 3542

70. 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 ¼ of a mark and for each wrong answer, of two marks question, the deduction is ⅓ of a mark. Moreover, ½ 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

A *Possible marks are given below:*

1 mark questions				*2 marks questions*				*Total*
Correct	*Wrong (-1/4)*	*Not ans. (-½)*	*Marks*	*Correct*	*Wrong (-1/3)*	*Not ans. (-½)*	*Marks*	
10	*0*	*0*	*10*	*10*	*0*	*0*	*20*	***30***
9	*1*	*0*	*8.75*	*10*	*0*	*0*	*20*	***28.75***
9	*0*	*1*	*8.5*	*10*	*0*	*0*	*20*	***28.5***
10	*0*	*0*	*10*	*9*	*1*	*0*	*17.67*	***27.67***
10	*0*	*0*	*10*	*9*	*0*	*1*	*17.5*	***27.5***

9	*1*	*0*	*8.75*	*9*	*0*	*1*	*17.5*	*26.25*
8	*2*	*0*	*7.5*	*10*	*0*	*0*	*20*	*27.5*
8	*1*	*1*	*7.25*	*10*	*0*	*0*	*20*	*27.25*

27.5 becomes 5th highest rank.

71. For a positive integer x, define f(x) such that f(x + a) = f(a × x), where a is an integer and f(1) = 4. If the value of f(1003) = k, then the value of 'k' will be:

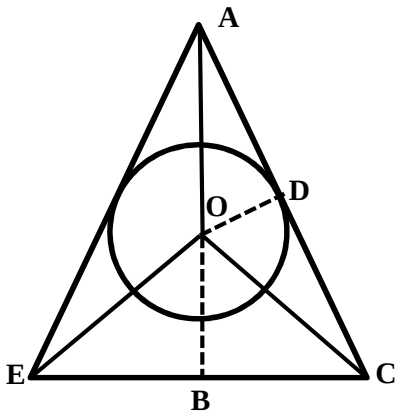
A. 1003
B. 1004
C. 1005
D. 1006
E. None of the above

E *Assume x = 1 and a = 0, Then, f(1) = f(0) = 4*
Now assume x = 1003 and a = 0, then, f(1003) = f(0) = 4
Note: This function is constant for all values of x.

72. 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

B



In this figure, OA = OC = OE = 625; then ∠OAD = ∠OCD
Both AE and AC are tangents to the circle (with centre O) → O is a point on AB.
Diameter of the circle = 350. Then, OD = 175
Now AD = 600 (AOD is a right angle triangle)
Then, Sin ∠OAD = OD/AO = 175/625 and Cos ∠OAD = AD/AO = 600/625

Also, ∠BOC = 2∠OAD = 90^0 – ∠OCB
Hence, ∠ACB = 90^0 – ∠OAD
Then, Cos ∠ACB = Cos (90^0 – ∠OAD) = Sin ∠OAD
Cos ∠ACB = BC/AC = BC/1200 = Sin ∠OAD = OD/OA = 175/625 → BC = 7×48
Again, Sin ∠ACB = AB/AC = = AB/1200 = Cos ∠OAD = AD/OA = 600/625 → AB = 24×48
Thus, Area of the triangle = ½×AB×EC = 24×48×7×48 = 387072 (Option B)

73. If the last 6 digits of [(M)! – (N)!] are 999000, which of the following option is *not* possible for (M)×(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

B *M! – N! = M(M – 1)(M – 2)…(N + 1)N! – N! = {M(M – 1)(M – 2)…(N + 1) – 1}N! = (Z – 1)N!*
where Z = M(M – 1)(M – 2)…(N + 1)

Last 3 digits are '000' and 4^{th} from last is 9 (i.e. not zero). So, what would be the value of N? To get three zeros, it requires 5 (along with an even number), 10, and 15 (along with an even number) and NOT 20 (then it would be 'XX0000').

4^{th} to 6^{th} places of this number is '999' (i.e. Z – 1= 1000×10^x – 1). So, Z should be more than 19 and it would have at least three zeros → Z should include both 20 and 25 (20 would give one zero and 25 would give two zeros) → M ≥ 25

Option A: 150 = 25×6 = 25×(25 – 19)
Option C: 200 = 25×8 = 25×(25 – 17)
Option D: 225 = 25×9 = 25×(25 – 16)
Option E: 234 = 26×9 = 26×(26 – 17)

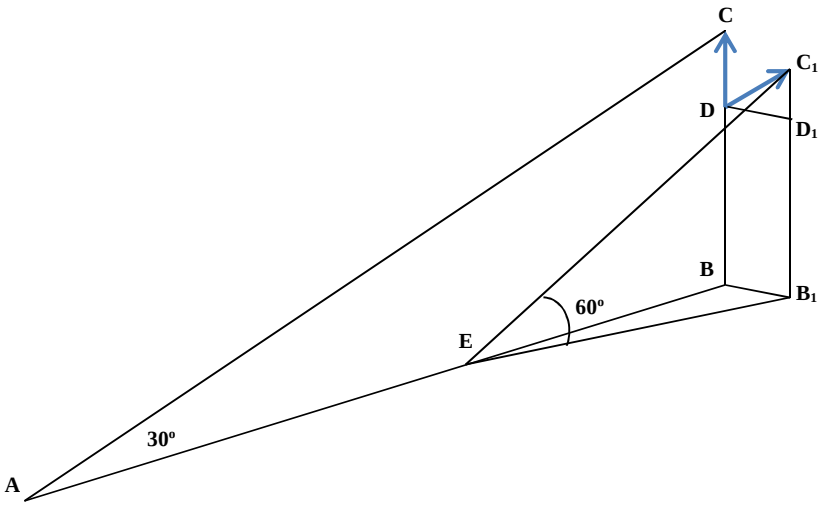
All are possible solution, however, 180 = 2×2×3×3×5, cannot be broken to fulfil the requirements.

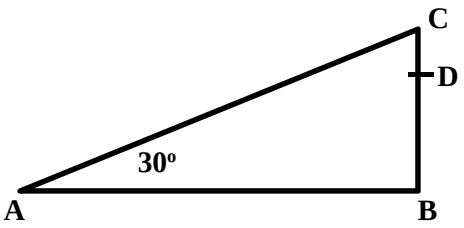
74. A person is standing at a distance of 1800 meters facing a giant clock at the top of a tower. At 5.00 p.m., he can see the tip of the minute hand of the clock at 30 degree elevation from his eye-level. Immediately, the person starts walking towards the tower. At 5.10 pm., the person noticed that 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√3 meters (√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

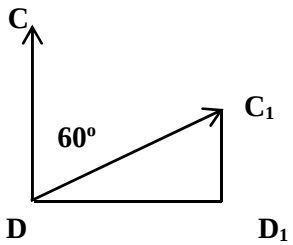
D



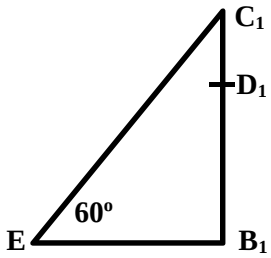


At 5:00 PM, initial distance = AB = 1800 mt.
Minutes hand height = CD = 200√3
At 5:00 PM, ∠CAB = 30°
CB/AB = tan 30° = 1/√3
CB = 600√3 and DB = 600√3 – 200√3 = 400√3

At 5:10 PM: the minutes hand would move from CD to C_1D (i.e. 60°) as follows:

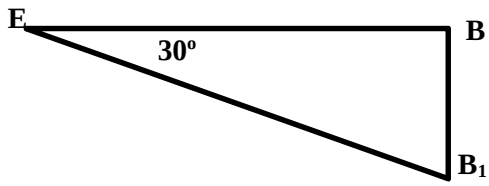


D and D_1 are at same height.
Then, ∠C_1DD_1 = 30°.
Thus, DD_1 = 300 and C_1D_1 = 100√3



At 5:10 PM, the person moves from A to E, where $\angle C_1EB_1 = 60^o$.
$C_1B_1 = 400\sqrt{3} + 100\sqrt{3} = 500\sqrt{3}$
Then, $EB_1 = 500$ mts.

The horizontal plane EBB_1 can be presented as below:



Now, $\angle C_1DD_1 = \angle BEB_1$, $DD_1 = BB_1 = 300$ mts. and $EB_1 = 500$ mts.
Then distance from tower at 5:10 PM = EB = 400 mts.
In 10 minutes, he travelled = 1800 – 400 = 1400 mts.

Speed = $1400\times60/(10\times1000)$ = 8.4 km/hr.

75. 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

B *Let's assume the three digit number is $100x + 10y + 0$ (as it is divisible by 10)*
The new number will be: $100y + 10x + 0$ (as this should also be divisible by 10)
Then, the difference between them is $90(x + y)$
If $90(x + y)$ is divisible by 40 then $(x + y)$ should be divisible by 4
In this three digit number, digits are in strictly descending order. Thus, x or y cannot be 0 (zero).
Possible combinations of (x, y) can be (9, 1), (9, 5), (8, 4), (7, 3), (6, 2) and (5, 1)

Hence, the correct Option is B i.e. 6 combinations.

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.

C *Assume, the cone has volume of 24 litres (or one may assume any multiple of LCM of 4, 8 and 12)*
A (inlet pipe) = 3 litres/hr. input, B (inlet pipe) = 2 litres/hr. input, C (outlet pipe) = 6 litres/hr. output
If all three are open for 1 hour, then 1 litre water will go out (water volume will reduce)
Volume of the cone = $1/3\pi r^2 h$

Initial volume of water = 24 litres
If the height of the water inside the cone is reduced to 50%, then the volume of water inside the inverted cone = $1/3\pi(r/2)^2(h/2) = 1/8\times$ (initial volume of water) = 3 litres

If all three pipes remain open for 20 hours, then 20 litres of water should go out and 4 litres of water should be inside the cone. However, 1 litre more water has gone out. Thus, one of the inlet pipes was open for less than 20 hours. In such case, either A was closed 20 minutes earlier or B was closed 30 minutes earlier.

Answer questions 77-80 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	98,125	180,400	113,275	15,000		

Parties*						

* 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%).

Question Table:

	Votes			Tweets			
	Year 2000	Year 2005	Year 2010	Total	Positive tweets	Negative tweets	***Neutral Tweets (Calculated)***
A	329,700	343,200	364,450	131,021	33.30%	35.40%	***31.30%***
B	133,450	154,000	241,325	108,128	30.40%	29.70%	***39.90%***
C	196,250	123,200	162,525	96,620	32.50%	26.60%	***40.90%***
D	27,475	48,400	54,175	41,524	30.60%	36.10%	***33.30%***
E	Not Given	30,800	49,250	32,724	21.60%	41.00%	***37.40%***
Other Parties*	98,125	180,400	113,275	15,000			
Total (Calculated)	***785,000***	***880,000***	***985,000***	***425,017***			

Answer Table:

	Question # 1			Question # 2	Question # 3			Question # 4		
	Vote % in 2005	Vote % in 2010	Change in Vote Share	# of neutral tweets	Vote % in 2000	Vote % in 2010	Gain in % 2000-10	Vote Share	Tweet Share	Deviation
A	39.00%	37.0%	-2.0%	41009.6	42.0%	37.0%	-5.0%	37.0%	30.8%	6.2%
B	17.50%	24.5%	7.0%	43143.1	17.0%	24.5%	7.5%	24.5%	25.4%	-0.9%
C	14.00%	16.5%	2.5%	39517.6	25.0%	16.5%	-8.5%	16.5%	22.7%	-6.2%
D	5.50%	5.5%	0.0%	13827.5	3.5%	5.5%	2.0%	5.5%	9.8%	-4.3%
E	3.50%	5.0%	1.5%	12238.8	0% -2%	5.0%	**3% - 5%**	5.0%	7.7%	-2.7%
Oth Par.					12.5%	11.5%	-1.0%	11.5%	3.5%	**8.0%**
			BCEDA	**Party B**						Other Parties

77. 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?

A. EBDCA
B. EBCDA
C. EBCAD
D. BCEDA
E. BCEAD

D *Correct sequence is BCEDA (7%, 2.5%, 1.5%, 0% and negative).*

78. Which of the following parties received maximum number of “neutral tweets” in the year 2010?

A. Party B
B. Party C
C. Party D
D. Party E
E. One of the parties categorised under 'Other Parties'

A *In Answer Table above, # of Neutral Tweet for any party = Total Tweet × (100% – Positive Tweet – Negative Tweet). Party B got 43143 Tweets i.e. Option A.*

79. 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%

B *2000 vote percentage for Party E is not given. Thus, maximum vote percentage for Party E can be 2% in 2000 (if it was under the category 'Other Parties').*
From Answer Table, we can directly conclude that possible values are Option A (for Party D) and Option E (for Party B). Moreover, this value can be in the range of 3% to 5% for Party E. So, Options C and D are also possible.

Hence, Option B (2.5% is not possible) is the correct answer.

80. 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

E *It is Other Parties (8%). Refer Answer Table.*

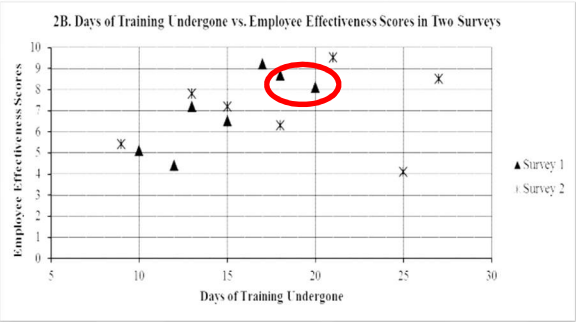
Answer questions 81-84 on the basis of information given below:

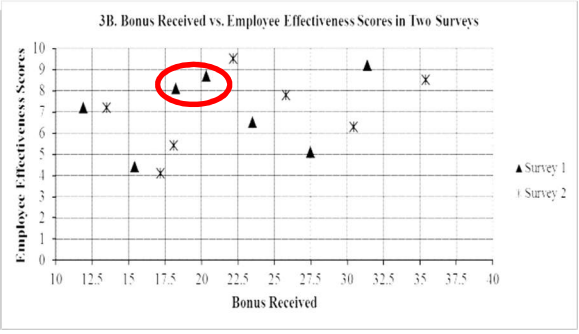
As a part of employee improvement programs, every year an organization conducts a survey on three factors: 1. Number of days (in integers) of training undergone, 2. Amount of bonus (in lacs) received by an employee and 3. Employee effectiveness score (on the scale of 1 to 10). Survey results for last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

81. In Survey 1, what was the average bonus earned by employees who underwent training for more than 17 days?

A. Between 16 and 17 lacs
B. Between 17 and 18 lacs
C. Between 18 and 19 lacs
D. Between 19 and 20 lacs
E. None of the above

D *In this question, we have to identify the employees who underwent training for more than 17 days. As training days are integer, from Graph 2B there are two employees who had training days 18 and 20 (encircled) and corresponding employee effectiveness in Survey 1 are 8.5+ and 8 respectively. From Graph 3B, corresponding bonus values in Survey 1 are 18+ and 20+. Thus, average will be 19+ (option D).*





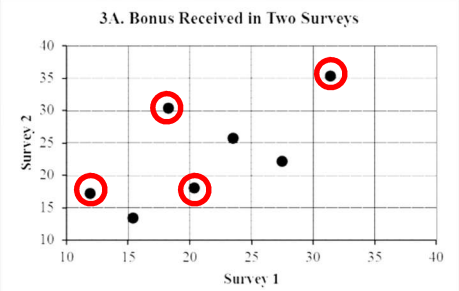
82. Identify the number of employees whose employee effectiveness score was higher than 7 in Survey 1, but whose bonus was lower than 20 lacs in Survey 2.

A. 2
B. 3
C. 4
D. 5
E. None of the above

A *There are 4 employees 'whose employee effectiveness score was higher than 7 in Survey 1' (Refer red line in Graph 3B). Bonus received by those 4 employees, in Survey 1, are < 12.5, > 17.5, > 20 and > 30.*

Corresponding bonus in survey 2, for these 4 employees are, < 20, > 30, < 20 and > 35 respectively (refer Graph 3A)

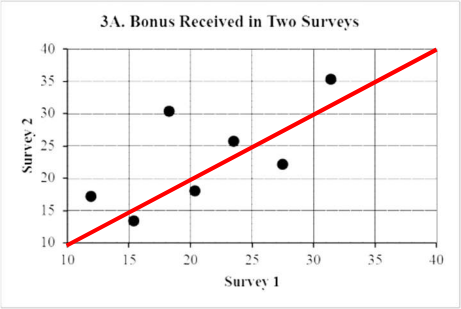
Hence, two employees are satisfying both the criteria mentioned in the question. Hence, Option A is the correct answer.



83. From Survey 1 to Survey 2, how many employees underwent more days of training but their annual bonus decreased?

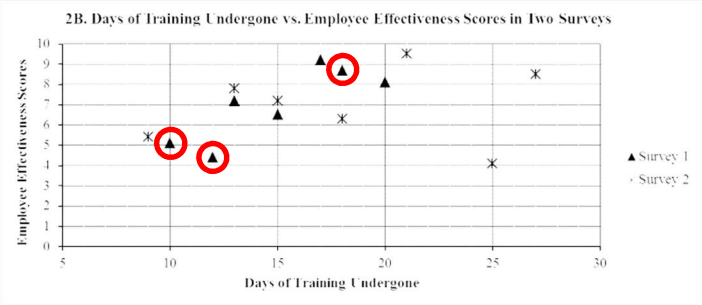
A. 1
B. 2
C. 3
D. 4
E. None of the above

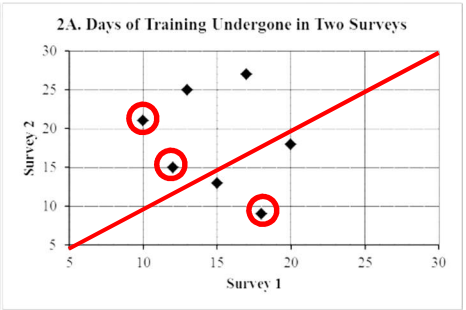
B *Refer Graph 3A to identify employees for whom annual bonus decreased from Survey 1 to Survey 2. In Graph 3A, there are 3 employees for whom annual bonus decreased (below the red line).*



Corresponding points are encircled in Graph 3B.

These 3 employees are encircled in Graph 2B and 2A as follows:





Refer Graph 2A to identify employees for whom training days increased from Survey 1 to Survey 2. In Graph 2A, there are 4 employees for whom training days increased (above the red line).

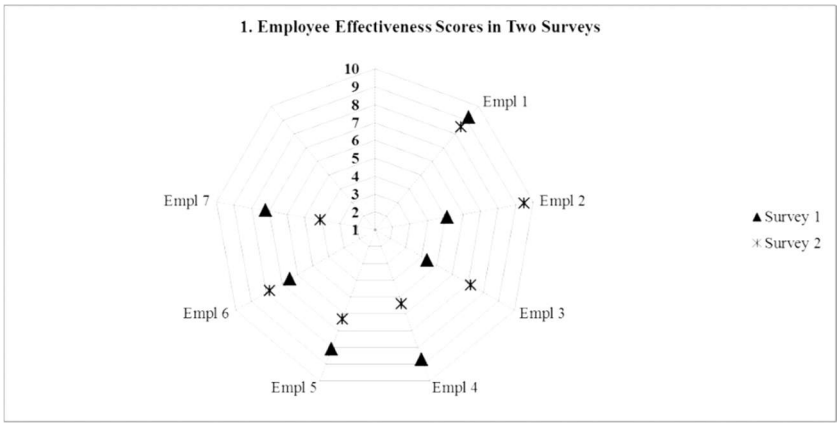
Only 2 employees satisfy both the conditions: above red line and encircled in Graph 2A.

Note: In Graph 2B, proceed along the axis: Days of training undergone and identify 1st, 2nd and 6th points and identify them also in Graph 2A (in the same order).

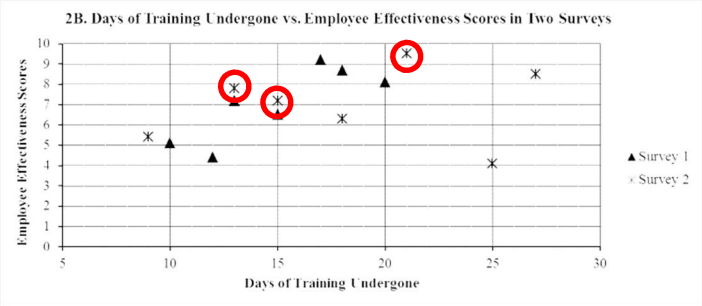
84. From Survey 1 to Survey 2: for how many employees training days increased along with an increase of employee effective score by at least 1.0 rating?

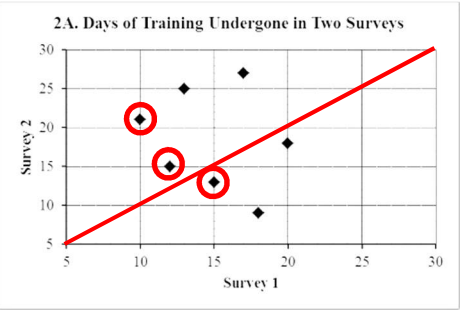
A. 2
B. 3
C. 4
D. 7
E. None of the above

A



As per Graph 1, there are 3 employees 'with an increase of employee effective score by at least 1.0 rating' (Employees 2, 3, and 6). Corresponding employees/points have been encircled for Survey 2 in Graph 2B, followed by Graph 2A, as follows:





Only 2 employees satisfy both the conditions (i.e. above the red line and encircled in Graph 2A).

Xavier Aptitude Test (XAT 2015)
Answer Key

Set A	
Q.No	Key
1	D
2	C
3	C
4	D
5	B
6	A
7	B
8	B
9	C
10	E
11	E
12	A
13	B
14	E
15	B
16	D
17	D
18	A
19	E
20	E
21	B
22	C
23	A
24	E
25	D
26	C
27	A
28	C
29	C
30	D
31	B
32	A
33	B
34	C
35	A
36	E
37	E
38	D
39	A
40	C
41	B
42	D

Set B	
Q.No	Key
1	C
2	D
3	B
4	A
5	B
6	B
7	D
8	C
9	E
10	C
11	E
12	E
13	B
14	C
15	A
16	A
17	B
18	E
19	B
20	D
21	D
22	A
23	E
24	C
25	A
26	C
27	E
28	D
29	E
30	E
31	D
32	D
33	E
34	C
35	C
36	D
37	B
38	A
39	B
40	C
41	A
42	A

Set C	
Q.No	Key
1	D
2	C
3	D
4	B
5	A
6	B
7	B
8	C
9	E
10	E
11	C
12	A
13	B
14	E
15	B
16	D
17	D
18	A
19	E
20	E
21	B
22	C
23	A
24	E
25	D
26	C
27	A
28	C
29	C
30	D
31	B
32	B
33	C
34	A
35	D
36	A
37	B
38	E
39	E
40	E
41	D
42	C

Set D	
Q.No	Key
1	C
2	D
3	B
4	A
5	B
6	B
7	C
8	D
9	C
10	E
11	E
12	E
13	B
14	C
15	A
16	A
17	B
18	E
19	B
20	D
21	D
22	A
23	E
24	C
25	A
26	C
27	E
28	D
29	B
30	C
31	A
32	E
33	E
34	D
35	A
36	C
37	B
38	D
39	A
40	B
41	E
42	C

Xavier Aptitude Test (XAT 2015)
Answer Key

Set A	
Q.No	Key
43	A
44	B
45	E
46	C
47	D
48	B
49	D
50	E
51	C
52	B
53	D
54	D
55	E
56	C
57	E
58	B
59	B
60	D
61	D
62	C
63	C
64	A
65	C
66	C
67	A/E
68	E
69	A
70	E
71	A
72	B
73	B
74	B
75	D
76	C
77	D
78	A
79	B
80	A
81	D
82	A
83	B
84	E

Set B	
Q.No	Key
43	C
44	B
45	D
46	A
47	B
48	E
49	C
50	D
51	B
52	B
53	E
54	C
55	D
56	D
57	B
58	B
59	E
60	D
61	D
62	A
63	C
64	C
65	C
66	A
67	E
68	A
69	C
70	A/E
71	E
72	B
73	B
74	D
75	B
76	C
77	D
78	A
79	B
80	E
81	D
82	A
83	B
84	A

Set C	
Q.No	Key
43	D
44	B
45	A
46	D
47	E
48	A
49	C
50	B
51	C
52	B
53	E
54	B
55	B
56	E
57	C
58	D
59	D
60	D
61	D
62	A
63	C
64	C
65	C
66	A
67	A/E
68	E
69	C
70	A
71	E
72	D
73	C
74	B
75	B
76	B
77	D
78	A
79	B
80	A
81	D
82	A
83	B
84	E

Set D	
Q.No	Key
43	D
44	B
45	D
46	E
47	C
48	D
49	B
50	A
51	C
52	B
53	D
54	E
55	C
56	E
57	D
58	B
59	B
60	D
61	D
62	C
63	C
64	A
65	C
66	A
67	E
68	E
69	C
70	A
71	A/E
72	B
73	B
74	D
75	C
76	B
77	D
78	A
79	B
80	E
81	D
82	A
83	B
84	A

Xavier Aptitude Test (XAT 2015)
Answer Key - General Knowledge

Set A	
Q.No	Key
1	A
2	E
3	D
4	B
5	A
6	D
7	A
8	A
9	D
10	A
11	B
12	A
13	A
14	B
15	C
16	C
17	E
18	C
19	A
20	C
21	B
22	B
23	D
24	E
25	D
26	D
27	C
28	E
29	E
30	D

Set B	
Q.No	Key
1	D
2	E
3	D
4	D
5	C
6	E
7	E
8	D
9	A
10	E
11	D
12	B
13	A
14	D
15	A
16	A
17	D
18	A
19	B
20	A
21	A
22	B
23	C
24	C
25	E
26	C
27	A
28	C
29	B
30	B

Set C	
Q.No	Key
1	C
2	E
3	C
4	A
5	C
6	B
7	B
8	D
9	E
10	D
11	D
12	C
13	E
14	E
15	D
16	A
17	E
18	D
19	B
20	A
21	D
22	A
23	A
24	D
25	A
26	B
27	A
28	A
29	B
30	C

Set D	
Q.No	Key
1	A
2	D
3	A
4	B
5	A
6	A
7	B
8	C
9	C
10	E
11	C
12	A
13	C
14	B
15	B
16	D
17	E
18	D
19	D
20	C
21	E
22	E
23	D
24	A
25	E
26	D
27	B
28	A
29	D
30	A