XAT - Detailed Solutions and Solution Key

Detailed Solutions:

1. As per the paragraph, even though the rock rolls back down the mountain under its own weight, Sisyphus is condemned to roll it back up. Thus only 'quandary' which means 'a circumstance that presents problems difficult to solve' or 'dilemma' correctly fits the first blank. Camus is comparing this image of the rolling stone with that of the human condition in this world – so it's like a metaphor. Thus 'symbolises' which means 'represent in the manner of symbol' correctly fits the second blank. 'Depicts' which means 'represents by drawing, sculpture, painting, etc.' is incorrect in the second blank. Camus further maintains that we should accept this feeling of absurdity and continue to live in the best way we can. Thus 'reconcile' which means 'to accept or be resigned to something not desired' correctly fits the third blank. Thus the correct sequence is – 4, 3, 7.
Hence, the correct answer is **option 2.**

2. As per the given sentence, though the role of 'horizontal stratification' has been acknowledged in higher education, not much attention is given to it in compulsory schooling. 'Whereas' means 'on the contrary' and 'while' means 'even though'. Both these words can be correctly used to fit the first blank. however, since 'horizontal stratification' has to be a part of higher education, only 'within' which means 'inside' correctly fits the second blank as well as fourth blank. 'Too less', 'for less' and 'further less' are grammatically incorrect in the third blank. 'Far fewer' is incorrect in the third blanks as it is a comparative degree while nothing has been compared in the sentence. Also, 'fewer' is used for countable nouns while nothing countable has been mentioned in the given sentence. Thus only 'far less' correctly fits the third blank.
Hence, the correct answer is **option 4.**

3. 'Actual' means 'in fact' or 'real'. Thus 'unfounded' which means 'not based on fact' is the correct antonym of 'actual' in the given sentence. ('Abstract' means 'having no reference to material objects' and is thus incorrect in the given sentence).
Hence, the correct answer is **option 1.**

4. We know that this passage is about the clay vessels and its users. Thus sentence 2 is the opening sentence of the paragraph as it mentions where these vessels were found. 'They' in sentence 1 refers to the scientists mentioned in sentence 2. Thus we get the 2-1 link. This eliminates option 4. Sentence 1 states that the rhyta were used to store cheese. Sentence 3 gives the reason for storing cheese instead of milk as it has a longer shelf life. Sentence 5 states that farmers could make use of cows for milking as it would last for several months while killing a cow would last only for a week. The phrase 'are thus forced to admit' indicates that even the archaeologists had to admit that using animals for dairy made more sense than using them for meat. Thus the link 5-4 is better than the 4-5 link. So we get the correct order 2-1-3-5-4.
Hence, the correct answer is **option 3.**

5. As per the paragraph, since we will remember everything we learnt, giving exams would become very easy. Thus only 'breeze' can fit the first blank as it means 'an easy task'. 'Joy' cannot fit the first blank as even though one remembers everything, nobody likes giving exams. Thus only options 1 and 5 can be retained. Since humans will have to remember everything, their memory needs to be increased. Thus only 'enhancing' which means 'raising to a higher degree' correctly fits the second blank. 'Exploring' means 'examining' and does not fit the second blank contextually. In the third blank, 'simulate' means 'creating a model or linking of something' while 'stimulate' means 'encourage'. Thus only the latter fits the third blank. In the fourth blank, 'aid' means 'help' while 'prosthesis' means 'an external device that supplements a part of the body'. Thus only 'aid' fits the last blank.
Hence, the correct answer is **option 5.**

6. Sentence 1 talks about 'their resources' which needs an antecedent. Thus it cannot be the first sentence of the paragraph. Sentence 2 can be the first sentence of the paragraph as it states how modern technology is changing the way which spectrums can be used. Sentence 2 talks about using spectrum as a common property resource. The reason for this is given in sentence 5 as it mentions how the demand for spectrum is increasing due to evolving technologies. This should be followed by sentence 4 mentions a reason for the shortage of supply for the spectrum. Thus sentences 5 and 4 are related as 5 talks about the demand while 4 talks about supply. So we get the link 2-5-4. There is a 3-1 link as 3 talks about the challenges posed to the spectrum managers who have to negotiate to get the maximum advantage possible of the spectrum allocated to them while 1 states how they can utilize their resources efficiently by studying the case studies of the early adopters of mobile technology. Thus we get the link 2-5-4-3-1.
Hence, the correct answer is **option 4.**

7. Though 'black' colour suggests 'evil' or 'darkness', we get a clue about the use of this colour from the last line of the poem – this is the silence of abandoned souls. This line suggests that the poem is related to 'death'. Thus option 1 is negated. Option 2 states that the theme of the poem is encapsulated in the first line. However, this can have multiple meanings and not until we reach the last line do we come to know the reason behind writing the poem. Thus option 2 can also be negated. Nothing has been mentioned about life or regeneration in the poem. Thus option 3 can also be negated. Option 4 correctly captures the effect of the images in line 1. Retain it. Option 5 talks about rebellion which is not suggested by the poem.
Hence, the correct answer is **option 4.**

8. Since the third last line of the poem states stars opening among lilies, it does not talk about the reflection of light from the stars. Thus option 1 can be negated. Though the first line of the second stanza talks about talks about light filtering from the water flowers, the given line specifically mentions 'lilies'. Thus the flowers, lilies and stars are not being compared.

Negate option 3. Though there is sense of hopelessness all around you, the beauty of nature can still capture you. This is similar to the blossoming of hope even when everything around is hopeless. Thus option 4 correctly captures the meaning of the line. Retain it. Nothing has been mentioned about the similarity of heaven and earth in the poem. Thus option 5 can also be negated.
Hence, the correct answer is **option 4.**

9. Option 1 is true according to the first sentence of the last paragraph and the last sentence of the passage. Thus it can be negated. Option 2 is true as per the last sentence of the first paragraph; negate it. Option 3 is true according to the third sentence of the fourth paragraph. Negate it. As per the paragraph, 'disgust' means 'repelling'. Thus 'admiration' is a better antonym than 'elevation' as is better fitted to the admiration of virtue in general. Negate option 4. As per the last sentence of the first paragraph, only elevation wipes out negative emotions. However, option 5 incorrectly states that any reaction to extraordinary stimuli purges us of all evil. Thus option 5 is false.
Hence, the correct answer is **option 5.**

10. The answer to this question is clearly mentioned in the seventh sentence of the last paragraph – Disgust is probably…..from other groups. Thus 'disgust' creates the 'us versus them' divide.
Hence, the correct answer is **option 5.**

11. As per the first sentence of the last paragraph – Elevation is part of a family of self-transcending emotions – elevation helps transcendence to a higher plane. Retain option 2. Nothing has been mentioned about creating national identities using elevation. Thus option 1 can be negated. Elevation does not attract followers as can be seen from the sentence – The effect of elevated language upon an audience is not persuasion but transport. Thus option 3 can be negated. Nothing has been mentioned about religion in the passage. Thus option 4 can also be negated. Similarly, though a person wants to imbibe the moral virtues of another person due to the effect of elevation, it does not help to enforce moral and ethical values in a society. Thus option 5 is also incorrect.
Hence, the correct answer is **option 2.**

12. Throughout the passage, the author gives various ways in which women are expected to talk during a public discourse. Also, he repeatedly mentions the differences inherent in the speeches of men and women. Also, men are expected to behave in a certain way so as to appear in control. Option 1 talks about male followers imitating powerful women political leaders. This goes against the ideas expressed in the passage. Retain it. Options 2 and 3 are correct as per the last sentence of the penultimate paragraph, Negate them. Option 4 is beyond the scope of the passage. Negate it. Option 5 again supports the fact that men consider themselves superior to women in eloquence. Negate it.
Hence, the correct answer is **option 1.**

13. The entire passage talks about how women are expected to perform in public discourse. All the options except option 4 give examples of where the women might be heard by the public or the media. However, chatting with intimate colleagues does not require her to put forth her public face.
Hence, the correct answer is **option 4.**

14. Throughout the passage, the author is stating the fact that men are expected to suppress their passion and emotion as they are supposed to be in control. Thus option 1, which talks about sharing emotions, will make the argument in the passage irrelevant. Retain it. Options 2 and 3 talk about scenarios which take place at the home or in office. However, the passage is about women's voices being heard in public. Thus both the options are not related to the passage and can be negated. Option 4 is true as per the last sentence of the penultimate paragraph; thus it can be negated. Option 5 talks about conversation while the passage is about public discourse. Thus it can also be negated.
Hence, the correct answer is **option 1.**

15. 123.As per the last sentence of the paragraph, people with mood disorders are more likely to be found in creative professions irrespective of their ability or inclination. This implies that not all persons with mood disorders are creative. Thus statement A is implied in the passage and can be negated. Statement B is true as per the first sentence of the last paragraph. Since we need to weaken the passage's main argument, statement B can be negated. As per the fourth sentence of the last passage, mood swings are more prevalent in creative professions than non-creative professions. Thus statement C can also be negated.
Hence, the correct answer is **option 1.**

16. As per the penultimate sentence of the last paragraph, abstract artists are less moody than expressive artists. Thus option 1 is incorrect. As per the fourth sentence of the last paragraph – professions in the creative arts are associated with greater psychopathology than professions in the sciences – creative people are more moody than other professions. Thus options 2 and 4 can be negated. Also, since an architect entails being creative, he is likely to have more mood disorders than a botanist who works in the realm of science. Thus option 5 can also be negated. Nothing has been mentioned about the amount of creativity in people with or without mood disorders. Thus option 3 cannot be inferred from the passage. Retain it.
Hence, the correct answer is **option 3.**

17. The entire last paragraph states that creative jobs are less rigid in structure than the normal nine-to-five jobs and also that people with psychopathology are represented more in creative jobs. This implies that creative people or people prone to mood swings do not like being in structure jobs. Thus option 4 which states that people in mental asylums prefer time-bound repetitive jobs is incorrect.
Hence, the correct answer is **option 4.**

18. The first sentence of the third sentence states that we need to take away any kind of protection i.e. any preconceived notion to appreciate art. Thus option 1 is incorrect as it states the opposite of what is implied in the sentence. Option 2 is correct. Nothing is mentioned about having prior knowledge to appreciate art. Thus option 3 is incorrect. The participation of the artist to appreciate art is beyond the scope of the passage.
Hence, the correct answer is **option 2.**

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20. The entire first paragraph states how we talk about the arrogance of the artist but not of the audience. It also states how the audience tends to not take art seriously and ignores it by chattering or glancing and then walking away. Thus when the author states that the audience can understand everything in a moment, he is being sarcastic about it.
Hence, the correct answer is **option 4.**

21. 'Emendation' means 'a correction or improvement in a text' which is the work of an 'editor'. Inculcating 'discipline' in students is not the job of a 'coach'. Thus option 1 is incorrect. Though an 'injunction' is 'an order issued by a court to a party to refrain from some act', a judge only gives justice. It is not his job to see to it that an injunction is issued. Thus option 2 is also incorrect. A 'doctor's job is to diagnose an illness by examining the patient. Thus option 3 is also incorrect. 'Renunciation' means 'abandonment' and not work of a saint but the mark of being a saint. Thus option 4 is also incorrect. An 'usher' illuminates the path so that he can show people to their seats. Retain option 5.
Hence, the correct answer is **option 5.**

22. Educated people opposing something does not make it illegal. Thus option 1 is fallacious. Since Marlon Brando is liked by everyone, he must be a famous person or else not everybody would know him. He is famous because he is an actor. Thus only liking an actor does not make him great. Thus option 2 is also fallacious. If one is taking risks, it will also have some costs. Thus option 3 is correct. Retain it. If the snake is drinking milk, he must like it as if the snake does not like milk, he will search for some other food irrespective of the milk being offered to him. Thus option 4 can be negated. Cheating in exams is wrong because not all student cheat and honest students then are at a disadvantage. Thus the reasoning in option 5 is also fallacious.
Hence, the correct answer is **option 3.**

23. AS per the paragraph, goats can distinguish between happy and angry humans and prefer humans who are happy. Options 1 and 5 are incorrect as the paragraph only states that goats can distinguish emotions not that they mirror those emotions. Though the paragraph states that goats prefer their humans to be happy, it does not mention if the goats ran towards happy images. Thus option 2 is incorrect. Option 3 is correct according to the paragraph; retain it. Nothing has been mentioned about goats getting afraid of angry humans. Thus option 4 is also incorrect.
Hence, the correct answer is **option 3.**

24. The clue to this question lies in the third last sentence of the paragraph. As per this sentence, these creatures once lived here and are now making a comeback to those same places. Thus option 5 which states that predators have genetic memory of their traditional stomping ground is correct. Option 1 talks about the changes in weather or season which is not implied in the given paragraph and can be negated. Option 2 also cannot be inferred from the paragraph as it does not mention migration. There is no connection between predators being spotted in surprising habitats and the place where they are born. Thus options 3 and 4 are also incorrect.
Hence, the correct answer is **option 5.**

25. As per the first sentence of the paragraph, the overall effect of a drug was calculated by subtracting the placebo response to the overall response. Option 1 is a right answer since in this case, even doctors do not know if the drug they are administering is a placebo or not. So they cannot be biased about giving the drug. Negate option 1. Since neither the patient nor the doctor knows of the drug is real or not, the response will be unbiased. Negate option 2. Option 3 is incorrect as only not knowing the type of drug taken will not increase the overall response to any drug. Retain it. Option 4 is true as scientists or researchers can calculate the effect of the placebo from the actual drug. So it can also be negated. Option 5 is also true as the patient does not know the type of drug that he is taking.
Hence, the correct answer is **option 3.**

26. As per the last two sentences of the paragraph, the quality of 'African quality' fuel is different from the one used in Europe since it is not considered fit for 'European humans'. This implies that European oil companies differentiate between African and European people. Option 1 talks about the economic exploitation in general while the paragraph is specifically about the exploitation of Africa's people. Thus it can be negated. Option 2 is incorrect as some African countries have come together to end the practice of 'dirty fuel'. The given paragraph only gives an example of Lagos. Though the fourth sentence of the paragraph states that an African scene is typically 'polluted, bedraggled and unhealthy', it does not imply that all African cities are similar to Lagos. Thus option 3 cannot be inferred from the paragraph; negate it. Option 4 can be assumed from the last three sentences of

the paragraph. Retain it. As per the sixth sentence of the paragraph, oil companies export diesel to African countries. Thus the phrase 'dump' which means 'to offer goods for sale in large quantities at a low price' or 'to dump below-cost goods into foreign markets' is incorrect in the given context. Thus option 5 can also be negated.
Hence, the correct answer is **option 4.**

27. If the government-instituted school ranking places 25% weight to policies similar to the school's policies, then the school has no choice but to implement the same. Thus [2] is most likely to get the affluent parents to accept the school's policy.
Hence, the correct answer is **option 2.**

28. Mrs. Bhalla is facing the problems of overcrowded classrooms and classroom management. Moreover, she wants the students to develop more sensitive and self motivated learners. In such a scenario, encouraging students for self-learning or making them compete will not make any difference to the problem at hand. Actions 3] and 5] are thus eliminated. This eliminated options [1], [2], [4], [5]. We are left with option [3]. Actions 1], 2] and 4] are appropriate steps for Mrs. Bhalla to carry out.
Hence, the correct answer is **option 3.**

29. Options [1] and [4] focus on poor and rich kids only. They can be easily eliminated. [5] makes no sense. Between [2] and [3], the former states how empowerment can be achieved. [3] is too general in nature. Eliminate [3].
Hence, the correct answer is **option 2.**

30. Racket is the most popular game of the country. 70% of the total revenue associated with the game originates from the country. Since the International Racket Association (IRA) has agreed to implement Drug Testing Code (DTC), the Racket Club has no choice but to implement the same. However, some players have reservations against this. The best thing for Thakur Raja would be to implement drug testing while also considering the demands of the senior players. Thus [1] is the correct choice of action. [2], [3] and [4] reek of personal vendetta. They are not appropriate for a person who is the Sports Minister. Moreover, they do not solve the problem at hand. [5] does not take into account the problems of the senior players.
Hence, [1] is the best course of action.
Hence, the correct answer is **option 1.**

31. Being the Sports Minister, it is important for Thakur Raja to act in anon-partisan manner. Based on this, we can eliminate [1], [3] and [4]. Between [2] and [5], the former offers a better reason for Raja to decide in favor of the IRA. If the next World cup is scheduled to be held in a country which has made DTC mandatory, the team that does not undergo such tests may be barred from playing. Hence, [2] presents the best argument for Raja to decide in favor of the IRA.
Hence, the correct answer is **option 2.**

32. Each athlete/sportsperson needs to submit their schedule for the next three months specifying an hour each day when they can be randomly tested for drugs. The top three popular players realize security is the only reason for them to get a favorable decision from Raja. Hence, they should be raising points that will focus on guidelines that DTC has submitted to ensure the confidentiality of the players' schedule and the possible implications if such guidelines are breached. Options [2], [3], [4] and [5] are appropriate to be discussed as they focus on the given aspects. [1] does not fall under the pointers that DTC has submitted to ensure the confidentiality of the players' schedule. It is out of context to the given situation. Hence, [1] should not be discussed.
Hence, the correct answer is **option 1.**

33. The Assistant Director states that spending the budget is unnecessary because their regular programs are already widely known. However, the Director feels that only by utilizing the entire budget can a similar amount be demanded the next year. In this case, it would be best to come up with some data/analysis to determine the next course of action. Hiring an external agency to study the gaps and needs is a valid course of action. Retain [2]. [1] and [3] are contrary to the Director's opinion. [4] may not be effective at all. It also makes little sense. [5] does not take into account that there is a conflict of opinion between the Assistant Director and the Director.
Hence, the correct answer is **option 2.**

34. The Public Relations Department has spent only 4 crores of its allocated 16 crores on publicity. There can be very little justification for any increase in advertising budget. However, if the organization has a new major scheme for immediate implementation, it would require substantial publicity. This can be the only reason for an increase in the advertising budget. Retain option [4]. The other alternatives do not provide a valid reason for the increase.
Hence, the correct answer is **option 4.**

35. The data states that Mr. Charan was selected as he was considered to be academically gifted with impressive leadership skills, even though he had less experience than Mr. Rana. The best way to handle the issue raised by Rana would be to empathize with him and state that the process was fair. [2] and [3] would be too rude and unprofessional as Mr. Rana has every right to voice his grievance. [4] does not help in resolving the situation. Moreover, it is too 'bureaucratic' in nature. [5] is not a better option when compared to [1] as it does not provide Mr. Rana with details of the assessment which would help him in his understanding of the situation.
Hence, the correct answer is **option 1.**

36. Following the advice of a person who has completed a similar task is not really a valid step to follow in a process. If it is followed, the rest of the actions would be irrelevant. Ignore [4]. From the other options, it would be prudent to first seek selection criteria to shortlist the bidders, then rate all 20

agencies on a scale and finally select the five lowest bids. Thus option [2] contains the appropriate sequence of actions.
Hence, the correct answer is **option 2.**

37. The first step to hire people would be to design an ad that attracts candidates with values that matches the Trust's values. Thus, 2] is the first step. Once the candidates apply, it would be necessary to shortlist apt candidates who reflect values of the Trust. Thus, 1] is the next step. Finally, after shortlisting, the hiring process has to be repeated as it was done the last time around. Hence, 3] would be the final step.
Hence, the correct answer is **option 2.**

38. Mr. Surya, the Head of the Trust is requesting to train eight newly recruited teaching assistants before they start their job next month. Even though all the slots are fully booked for the next 3 months, the training of the new teaching assistants is crucial. As the slots are fully booked for the next 3 months, a new agency can be appointed for the task of training. Thus, 3] is the best possible action. In case 2] s not possible, then it would be fair for the HR Manager to conduct induction sessions for training after office hours. Thus, 4] can be followed next. In case both 2] and 4] are not possible, it would be prudent to honestly inform the Head that some teaching assistants could be accommodated only if some inductees dropped out in the first month. Hence, 3] follows next. Also 1] can only be the last possible course-of-action due to it being confrontational in nature.
Hence, the correct answer is **option 3.**

39. Divya is mulling over operating Rollover Handcrafted Ice Cream Company's franchise in Warangal. The most important criteria in such an endeavour would be profitability and revenue. However, should she go ahead and start a franchise? [2] is irrelevant to the question at hand. [5] would be contrary to what Divya wants to do. The situation of the friend who runs a restaurant in Kazipet is not a good reason or Divya to launch an Ice Cream franchise in the same place. Hence, [1] is not a good reason. Between [2] and [4], the former would just take care of her capital/investments. However, [4] assures her a good source of income and can lead to good profits if Divya continues to fetchhigh prices for her ice creams without losing customers. Hence, [4] is a better choice.
Hence, the correct answer is **option 4.**

40. We have to find the reason that is least likely to demotivate Divya. [1], [2] and [3] would clearly demotivate Divya. [5] is not likely to demotivate Divya as banks always insist on loan repayment on a monthly basis unless one can have some arrangement to delay repayment. However, [4] is completely unlikely to motivate Divya to start the franchise. On the contrary, [4] may motivate her to start her franchise. Thus, [4] is the better choice for the answer.
Hence, the correct answer is **option 4.**

41. [1] and [3] are not about Kazipet. [2] would make Divya opt out of Kazipet rather than choosing it. [4] and [5] would be good reasons for Divya to opt for Kazipet. The data states that Divya 'hoped to target college going crowd of Kazipet'. So [4] meets the condition. The college going crowd would have a slight advantage over teenagers as mere 'attraction' towards ice-cream (on the part of teenagers) may not lead to sales. Moreover, the college going crowd is 'excited about' (or looking forward to) the latest in ice creams. This can help Divya to open her franchise in Kazipet. Hence, [4] has scores over [5].
Hence, the correct answer is **option 4.**

42. Similar to question 13, the most important decision criterion for Divya to consider in such a business situation would be assured rise in income and profitability. Hence, only [1] can be a valid option.
Hence, the correct answer is **option 1.**

43. The stakeholders – the management and the doctors – are at loggerheads. The best option would be to start with a needs analysis. Step 1] would be the most appropriate option for the first step. After that, building a consensus among doctors and paramedics on a possible way forward and preparing an action plan along with financial implications would be suitable steps. Thus 1] 2] 3] is the right sequence. Steps 4] and 5] do not address the problem at hand.
Hence, the correct answer is **option 3.**

44. The hospital management has to amicably resolve the situation so that all the stakeholders –management, doctors, paramedics and patients – are happy. [1], [4] and [5] do not help in this situation. The hospital management also wants to improve the patient satisfaction and the success rate. The doctors feel the management should spend more on recruiting more paramedics who could spend time with patients. The passage states that 'For the management, this (recruiting more paramedics) would mean loss of patients'. Thus an increase in paramedics is ruled out. In such a scenario, it would be suitable if the management manages with existing doctors/paramedics by increasing their incomes, and augmenting the ambiance of the hospital. Thus [2] is a better option than [3].
Hence, the correct answer is **option 2.**

45. The most interactive and effective way to increase the learning among paramedics and doctors would be the one in which they meet everyday and discuss their insights. Thus [2] is the best choice. [1] does not help in mutual learning. [3] and [4] are not as interactive as [2]. [5] is not practical as giving lectures to others before they start their work is not a great way of learning or exchanging notes at all in an hospital type work environment.
Hence, the correct answer is **option 2.**

46. To keep customers engaged with the company, RAC has to engage the buyers and try and deliver the car on time. Step 3] would be an important step in attractive customers. However, to manufacture the car quickly, RAC would also have to get the necessary parts and equipment quickly. Step 4] would be necessary here. Finally, to cut down import costs, step 5]

would have to be followed as well. Here step 6] does not help in resolving the conflict as it is only a promise. Also step 1] and 2] are unethical/against the company's interests. Thus only steps 3], 4], 5] can be followed.

Hence, the correct answer is **option 5.**

47. Since Mr. Murugan is willing to deposit an approximate price of Limo to buy the first available unit from Mr. Ahmed, there is no harm in collecting the entire amount that he is willing to deposit. Since Electro Automobile is yet to announce the actual price, Mr. Ahmed should clarify that delivery and price is subject to the company policy. Thus [1] is the best choice for the answer. [2] is unethical. [3] does not address that part that the price is not final. [4] does not make sense when Mr. Murugan is ready to deposit the full price. [5] may result in Mr. Ahmed losing the deal if Mr. Murugan loses his interest. Compared to [1], option [5] is not better in any way.

Hence, the correct answer is **option 1.**

48. Given that 'a' and 'b' are inversely

proportional to each other $a \propto \frac{1}{b}$

$\therefore$ there is a constant k where $a = \frac{k}{b}$ or

$k = ab$

The value of a increases by 100% which means if 'a' is replaced by '$2a$' in the above equation. Now for the value 'k' which is a constant (i.e ab), to be the same, the value of b has to be reduced by half to $\frac{b}{2}$

$\therefore\ k = \frac{b}{2} \times 2a = ab$

So the value of b will reduce to $\frac{b}{2}$

Percentage decrease in value of b

$= \frac{b - \frac{b}{2}}{b} \times 100 = \frac{\frac{b}{2}}{b} \times 100 = 50\%$

Hence, **option 2.**

49. Let A, B, C, D and E be the initial salary of the 5 employees. As each of them has the same salary after 2 years, let that value for the 5 employees be x.

Now the final salary in terms of A, B, C, D and E for the 5 employees will be as follows

A $\left(\frac{100+p}{100}\right)\left(\frac{101+p}{100}\right)$

$= \text{A}\left(\frac{10100+201p+p^2}{10000}\right)$

B $\left(\frac{102+p}{100}\right)\left(\frac{99+p}{100}\right)$

$= \text{B}\left(\frac{10101+201p+p^2}{10000}\right)$

C $\left(\frac{103+p}{100}\right)\left(\frac{98+p}{100}\right)$

$= \text{B}\left(\frac{10094+201p+p^2}{10000}\right)$

D $\left(\frac{104+p}{100}\right)\left(\frac{97+p}{100}\right)$

$= \text{D}\left(\frac{10088+201p+p^2}{10000}\right)$

E $\left(\frac{105+p}{100}\right)\left(\frac{96+p}{100}\right)$

$= \text{D}\left(\frac{10080+201p+p^2}{10000}\right)$

Now each of the above 5 values is equal to x So the initial salaries of A, B, C, D and E in terms of x will be as follows

A $\rightarrow \frac{10000x}{(10100+201p+p^2)}$

B $\rightarrow \frac{10000x}{(10101+201p+p^2)}$

C $\rightarrow \frac{10000x}{(10094+201p+p^2)}$

D $\rightarrow \frac{10000x}{(10088+201p+p^2)}$

E $\rightarrow \frac{10000x}{(10080+201p+p^2)}$

If we now observe the initial salaries of the 5 employees (which is in fractional form in terms of x), we will see that the numerators of the salary is the same for all employees. Now, the denominator of the initial salary(in terms of x) of all 5 individuals has only positive terms. Further 2 terms , p^2 and 201 p , are common to all the denominators .For all 5 individuals , the 3rd term in the denominator which is a 5 digit natural number greater than 10000 is the least for E. This would mean that the denominator of the initial salary is the least for E. As the numerator of the initial salary is the same for all 5 individuals and denominator of the initial salary is the least for E, it would mean that E had the highest initial salary. Now each of A, B, C, D and E have the same final salary. As all 5 individuals have the same final salary but E has the highest initial salary it would mean that the increase in salary for E is the least.

Hence, **option 1.**

50. Let r1 and h1 be the radius and height of the cylinder. Let r2 and h2 be the radius and height of the cone.

Volume of the Cylinder $= \Pi {r_1}^2 h_1$

Volume of the Conical Inglot $= \frac{1}{3}\Pi {r_2}^2 h_2$

Given $\frac{h_1}{h_2} = \frac{2}{1}$, Also $\frac{\Pi {r_1}^2}{\Pi {r_2}^2} = \frac{5}{1}$

No of conical inglots

$$= \frac{\text{Volume of Cylinder}}{\text{Volume of Conical Inglot}}$$

$$= \frac{\Pi {r_1}^2 h_1}{\frac{1}{3}\Pi {r_2}^2 h_2} = \frac{\Pi {r_1}^2}{\Pi {r_2}^2} \times \frac{h_1}{h_2} \times \frac{1}{\frac{1}{3}} = 5 \times 2 \times 3$$

= 30

Hence, **option 2.**

51. To get the median salary, we arrange the salaries of the 9 employees in numerical ascending order. The salaries when arranged in ascending numerical order will be as follows

15000, 15000, 15000, 15000, 15000, 40000, 40000, 40000, 66000

Now the median of these 9 values will be

the $\frac{(n+1)^{\text{th}}}{2}$ value

as n (i.e no of values in the group)is 9 and hence an odd number.

$$\therefore \text{ Median is the } \frac{(5+1)^{\text{th}}}{2} \text{ or the } 5^{\text{th}} \text{ value}$$

Looking at the values we can see that the 5th value is 15000.

∴ Median = 15000

Mean Salary of these 9 employees

$$= \frac{5 \times 15000 + 3 \times 40000 + 1 \times 66000}{5 + 3 + 1}$$

$$= \frac{261000}{9} = 29000$$

∴ Mean salary exceeds Median Salary by 29000 -15000 or 14000

Hence, **option 2.**

52. Let us prime factorize all the terms under the cube root sign.

$35^{b+1} = 7^{b+1} \times 5^{b+1}$

$20^{c+2} = (2^2)^{c+2} \times 5^{c+2} = 2^{2c+4} \times 5^{c+2}$

Now rearranging the terms to express the entire term to express the entire term under the cube root sign as a product of prime factors 2, 5 and 7 we get the following

$$\sqrt[3]{7^a \times 7^{b+1} \times 5^{b+1} \times 5^{c+2} \times 2^{2c+4}}$$

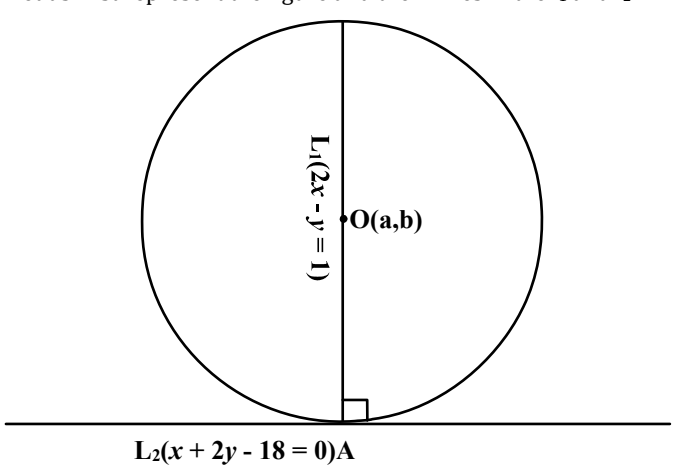
$$= \sqrt[3]{7^{a+b+1} \times 5^{b+c+3} \times 2^{2c+4}}$$

Now the powers of each of the numbers 7, 5 and 3 i.e $(a + b + 1)$, $(b + c + 3)$ and $(2c + 4)$ have to be a multiple of 3 if the number under the cube root sign is a natural number. If we substitute values of a, b and c in the given options, we will see that only values of a, b and c given in option 1 are such that each of $(a + b + 1)$, $(b + c + 3)$ and $(2c + 4)$ will be a multiple of 3.

Hence, **option 1.**

53. No solution is being provided as question is incorrect.

54. Let us first represent the figure and the 2 lines in the l_1 and l_2 .



Let O be the centre of the circle and A be the point of intersection of the 2 lines l_1 and l_2. The coordinates of A can be found out by solving the simultaneous equations of the lines l1($2x - y = 1$) and l2 ($x + 2y = 18$). Solving both these equations we get the value of x and y as 4 and 7 respectively. So coordinates of A are (4, 7).
Now coordinates of centre O of the circle is (a, b).

Also distance OA represents the radius of the circle which is $\sqrt{20}$ units.
Using the distance formula
$(a-4)^2 + (b-7)^2 = 20$ ... (I)
Also (a, b) has to satisfy the equation $2x - y = 1 \rightarrow 2a - b = 1 \rightarrow b = 2a - 1$ ... (II)
Replacing b as $2a - 1$ in Equation (I) we get
$(a-4)^2 + (2a-8)^2 = 20$
$a^2 - 8a + 16 + 4a^2 - 32a + 64 = 20$
$\rightarrow 5a^2 - 40a + 60 = 0$
$\rightarrow a^2 - 8a + 12 = 0$
If $a = 6$, we get $b = 2(6) - 1 = 11 \rightarrow a + b$
$= 6 + 11 = 17$
If $a = 2$, we get $b = 2(2) - 1 = 3 \rightarrow a + b = 5$
So either ($a + b$) is either 5 or 17
From 5 and 17 only 17 is listed in option (3).
Hence, **option 3.**

55. Let the CP of the article be Rs 100.
$\therefore$ M.P = 100 + x
An article is marked x% above the cost price.
A discount of $\frac{2}{3}x$% is given on the marked price.

$$\text{S.P} = 100 + x - \frac{2}{3}x(100 + x)$$

As a discount of $\frac{2}{3}x\%$ is given on the M. P

$$= 100 + \frac{x}{3} - \frac{x^2}{150}$$

Now Profit = S.P – C.P

$$= 100 + \frac{x}{3} - \frac{x^2}{150} - 100 = \frac{x}{3} - \frac{x^2}{150}$$

As per given data, Profit is 4%. So if C.P
= 100, Profit = 4

$$\therefore \frac{x}{3} - \frac{x^2}{150} = 4$$

$\rightarrow 150x - 3x^2 = 1800$
$\rightarrow 3x^2 - 150x - 1800 = 0$
$\rightarrow x^2 - 50x - 600 = 0$
Solving we get $x = 20$ or $x = 30$
As it is given that x lies between 25% and 50%, $x = 30$.
Now 50% of x = 50% of 30 = 15
Hence, **option 1.**

56. Let 'x_1' and 'y_1' be the coordinates of P.
$3x_1 + 4y_1 = 2a$ ... (I)
$7x_1 + 2y_1 = 2018$ ... (II)

Solving equation (I) and (II) simultaneously we get the value of 'x_1' and 'y_1' in terms of 'a'.

$$x_1 = \frac{4036 - 2a}{11} \text{ and } y_1 = \frac{7a - 3027}{11}$$

So co-ordinates of P are

$$\left(\frac{4036 - 2a}{11}, \frac{7a - 3027}{11}\right)$$

Let 'x_2' and 'y_2' be the coordinates of Q.
$3x_2 + 4y_2 = 2018$ ... (III)
$5x_2 + 3y_2 = 1$ ... (IV)
Solving equation (III) and (IV) we get the value of 'x_2' and 'y_2' as –550 and 917 respectively.
Coordinates of Q are (–550, 917)
Now slope of line connecting P and Q is 2

$$\therefore \frac{\frac{7a - 3027}{11} - 917}{\frac{4036 - 2a}{11} + 550} = \frac{2}{1}$$

$$\rightarrow \frac{\frac{7a - 3027 - 917 \times 11}{11}}{\frac{4036 - 2a - 6050}{11}} = \frac{2}{1}$$

$$\frac{7a - 13114}{10086 - 2a} = \frac{2}{1}$$

Solving we get $7a + 4a = 20172 + 13114$
$\rightarrow 11a = 33286 \rightarrow a = 3026$.
Hence, **option 5.**

57. In Row 'n' of the triangular array, there are 'n' apples,

So initially, the total no of apples will be a number of the form

$$\frac{n(n+1)}{2}$$

Now,

$\frac{n(n+1)}{2} < 150,$

where n is a natural number

At $n = 16$, value of $\frac{n(n+1)}{2} = 136,$

At $n = 17$, value of $\frac{n(n+1)}{2} = 153,$

So, initially there are 16 rows and 136 apples arranged in a triangular array in these 16 rows.
As the customer observes 126 apples, it would mean that 10 apples were removed. Now, apples are removed starting from Row 1, which has 1 apple. So apples must have been removed in such a way with 1 apple from Row 1, 2 apples from Row 2, 3 apples from Row 3 and 4 apples from Row 4.
So in all 10 apples were removed the first 4 rows.As out of 16 rows,apples are removed till Row 4, it would mean that only 16-4 or 12 rows of apples are visible to the customer.
Hence, **option 5.**

58. $\frac{\log(97-56\sqrt{3})}{\log\sqrt{(7+4\sqrt{3})}}$

$\rightarrow \frac{\log(7-4\sqrt{3})^2}{\log(7+4\sqrt{3})^{\frac{1}{2}}}$

Now,

$7-4\sqrt{3} = 7-4\sqrt{3} \times \frac{7+4\sqrt{3}}{7+4\sqrt{3}}$

$= \frac{49-48}{7+4\sqrt{3}} = \frac{1}{7+4\sqrt{3}}$

$\therefore \log(7-4\sqrt{3})^2 = \log\left(\frac{1}{7+4\sqrt{3}}\right)^2$

$\rightarrow \log(7+4\sqrt{3})^{-2}$

$\frac{\log(7+4\sqrt{3})^{-2}}{\log(7+4\sqrt{3})^{\frac{1}{2}}} = \frac{-2\log(7+4\sqrt{3})}{\frac{1}{2}\log(7+4\sqrt{3})}$

$= -2 \times \frac{1}{2} = -2 \times 2 = -4$

Hence, **option 4.**

59. Let us construct a perpendicular from D to AB which meets AB at P and C to AB and C to AB which meets AB at Q .
Since CD ‖ AB, PD = QC
Let PD = QC = h,
Now in ΔPAD,

$\sin\angle \text{PAD}, = \frac{\text{Opp}}{\text{Hyp}} = \frac{l(\text{PD})}{l(\text{AD})} = \frac{h}{l(\text{AD})}$

Also, as B and P are collinear, sin∠ BAD

$= \frac{h}{l(\text{AD})}$

In ΔCAQ,

$\sin\angle \text{QAC} = \frac{l(\text{CQ})}{l(\text{AC})} = \frac{h}{l(\text{AC})}$

Also, as B and Q are collinear.

$\sin\angle \text{BAC} = \frac{h}{l(\text{AC})}$

$\frac{\sin\angle \text{BAC}}{\sin\angle \text{BAD}} = \frac{h}{l(\text{AC})} \div \frac{h}{l(\text{AD})} = \frac{l(\text{AD})}{l(\text{AC})}$

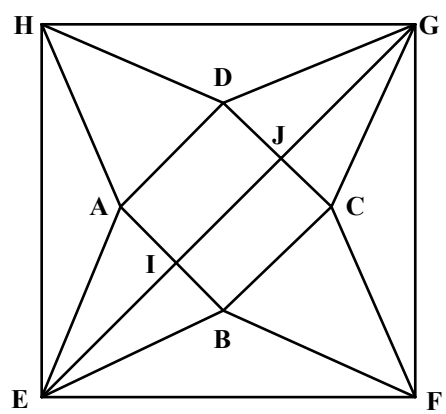
Hence, **option 1.**

60. Price of computer = Rs 19200
As per the given data, a down payment of Rs 14400 is to be made over 5 months at 12 % p.a in 5 equal monthly installments starting the end of the 1st month.
If the amount was paid exactly of the 5 months, interest to be charged for 5 months would be

$\frac{5}{12} \times \frac{12}{100} \times 14400 = 720$

In that case amount to be paid at the end of 5 months would be 14400 + 720 =15120
Now the same amount is to be paid as a monthly instalment over 5 months. Let the instalment amount be Rs. 'x'. For each of the 5 instalments we need to find the future value of x at the end of the 5th month
Now for the instalment paid at the end of Month 1, its future value can be calculated by taking interest for a period of 4 months (i.e between the end of Month 1 and Month 5). Likewise we need to find the future values of all other instalments. So at 1 % interest per month, future values of the total amount paid after 5 months is 15120.
$\therefore 1.04x + 1.03x + 1.02x + 1.01x + x = 15120$
$5.1x = 15120$
$\rightarrow x \approx 2965.$
Hence, **option 1.**

61.



In □EFGH, EG is the diagonal. Also EI and GJ are the perpendicular bisectors of the equilateral triangles AEB and GCD. Let us suppose AB = 'a' units .DC will also be 'a' units since AB and CD are sides of the same square.

In ΔGCD, GJ $= \frac{\sqrt{3}a}{2}$

(∵ perpendicular bisectors of the equilateral

triangles is $\frac{\sqrt{3}}{2}$ times the side of the triangle)

Similarly EI $= \frac{\sqrt{3}a}{2}$

Now l(IJ) = side of square ABCD (∵ IJ ‖ AD and BC)
EG = EI + IJ + GJ

$\rightarrow \frac{\sqrt{3}a}{2} + a + \frac{\sqrt{3}a}{2} = \sqrt{3}a + a$

$= a(\sqrt{3} + 1)$
Area of square EFGH

$= \frac{1}{2} \times$ Product of 2 diagonals

$= \frac{1}{2} \times \left[\left(\sqrt{3} + 1\right) \times a\right]^2$

$\frac{1}{2} \times \left[\left(3 + 1 + 2\sqrt{3}\right) \times a^2\right]$

$= \frac{1}{2} \times \left(4 + 2\sqrt{3}\right) \times a^2$

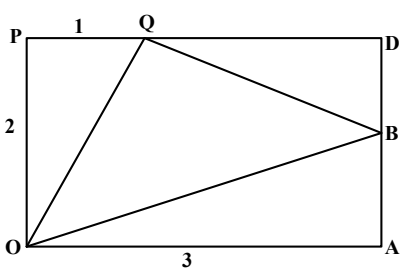
$= \frac{1}{2} \times 2 \times \left(2 + \sqrt{3}\right) \times a^2 = (2 + \sqrt{3}) \times a^2$

Area of square ABCD = a^2
Ratio of area of EFGH to area of ABCD

$= \left[\left(2 + \sqrt{3}\right) \times a^2\right] \div a^2 = \left(2 + \sqrt{3}\right) : 1$

Hence, **option 4.**

62. In the given figure since AB an OP are parallel, ∠ POA and ∠ BAO are supplementary angles since interior opposite angles add upto 180° . Now, if we extend PQ and AB to meet at a point say D, quadrilateral PDAO will be a rectangle as shown in the figure below.



In Δ PQO → OQ $= \sqrt{2^2 + 1^2} = \sqrt{5}$

In Δ BAO → BO $= \sqrt{3^2 + 1^2} = \sqrt{10}$
Also, PD = OA = 3 units (Opposite sides of a rectangle)
∴ QD = 3 – 1 = 2 units
Further, AD = PO = 2 units
∴ BD = AD - AB = 2 – 1 = 1 unit
In ΔBQD, QB $= \sqrt{QB^2 + BD^2}$
$= \sqrt{2^2 + 1^2} = \sqrt{5}$ units

In ΔQOB, the sides are $\sqrt{5}, \sqrt{5}$ and $\sqrt{10}$ units.

Hence, the ratio of their sides is $1 : 1 : \sqrt{2}$.

This means that QOB is an isosceles right angled triangle where ∠ QOB = ∠ QBO = 45°
Hence, **option 2.**

63. For $f(x)$ to be less than 0, x cannot take the value 0 or any positive value, since all the terms of the form x +'a positive integer'. Further, if x assumes any negative value greater than –4, $f(x)$ will be greater than 0. Also, if x is a negative even integer less than or equal to –4 and greater than or equal to –98, $f(x)$ will be zero.
Between –4 and –98, there are

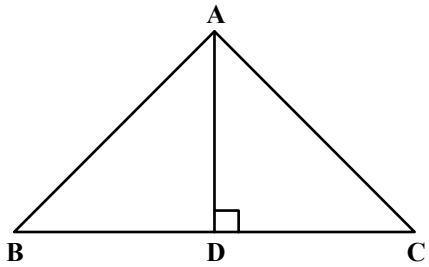
$\frac{-5 - (-97)}{2} + 1 = \frac{-5 + 97}{2} + 1 = 47$ odd negative integers.

Let's assume x = –5
For x = –5, → (x + 4)(x + 6) ……(x + 98)
$f(x)$ = (–1)(1)……(91)(93)
So $f(x)$ is a product of one negative integer and 26 positive integers making $f(x) < 0$.
For x = –7, → $f(x)$
= (–3)(–1)(1)(3) …..(89)(91)
$f(x)$ is a product of two negative integers and 25 positive integers making $f(x) > 0$.
For x = –9, → $f(x)$ = (–5)(–3)
(–1)(1)(3)……(87)(89) and hence $f(x)$ being a product of 3 negative integers and 24 positive integers is less than 0.
∴ for x = –5, –9, –13….., –97, $f(x) < 0$,

$\frac{-5 - (-97)}{4} + 1 = 24$ integers , $f(x) < 0$.

Hence, **option 4.**

64. Now ΔABC is an isosceles triangle where AB = AC. Let a perpendicular from A meet BC at D. As ΔABC is isosceles, AD is a perpendicular bisector and BD = CD.



Now in ΔABD, ∠ ABD = ∠ ABC = b (∵ C and D are collinear)

$\sin b = \frac{3}{5}$ and AB $= x$

Now in ΔABD, $\sin b = \frac{AD}{AB} = \frac{3}{5}$,

$\therefore \frac{AD}{x} = \frac{3}{5} \rightarrow AD = \frac{3}{5}x$

Now in ΔABD, BD $= \sqrt{x^2 - \left(\frac{3}{5}\right)^2} = \sqrt{\frac{16x^2}{25}}$

$= \frac{4x}{5}$

$\therefore$ CD = BD = $\frac{4x}{5}$

Further , BC = CD + BD = $\frac{8}{5}x$

Now,

Area of ΔABC = $\frac{1}{2} \times x \times \frac{8x}{5} \times \sin b$ = M

$\frac{4x^2}{5} \times \frac{3}{5}$ = M

$\rightarrow$ M = $\frac{12x^2}{25}$

Looking at the options we can see that M

lies between $\frac{x^2}{4}$ and $\frac{x^2}{2}$

Hence, **option 1.**

65. $x^2 + x + 1 = 0$

$\rightarrow x^2 + x = -1$ ... (I)

$\rightarrow x^2 = -x - 1$ ... (II)

In Eq^n (II) Multiplying both sides by x

$x^3 = -x^2 - x \rightarrow x^3 + x = -x^2$

Equating (II) and (III) we get

$-x^3 - x = -x - 1$

$\rightarrow x^3 = 1$

Now,

$x^{2018} = (x^3)^{672} \times x^2 = (1)^{672} \times x^2 = x^2$

$x^{2019} = (x^3)^{673} = (1)^{673} = 1$

$x^{2018} + x^{2019} = x^2 + 1$

Now looking at equation (I)

$x^2 + 1 = -x$

$x^{2018} + x^{2019} = -x$

Hence, **option 1.**

66. If we take one point at the centre of the circle , the remaining points can only be at the circumference of the circle as the minimum distance between any 2 points is at least 1 m (which is the radius of the circle). Also , the remaining points on the circumference of the circle have to be such that 2 points are at a distance of less than one.

Now circumference of the circle

$= 2 \times \frac{22}{7} \times 1 = \frac{44}{7} \approx 6.28$m

As the circumference or the length of the boundary is 6.28m, we can have a maximum of 6 points on the circumference such that the distance between any 2 points is at least 1 m .So in all we can have a maximum of 6 points on the circumference and 1 point at the centre of the circle, making a total of 7 points.

Hence, **option 5.**

67. We know that in all there are 8 blue marbles.

Let us first look at statement I.

As per statement I if we are to pull out 17 marbles from the bag, we will ensure that there are at least 3 greeen marbles. Now out of 17 marbles removed, 8 are blue .So from the 9 marbles that are removed, if at least 3 are green, it would mean maximum possible no of red marbles removed are 9-3 or 6.Which means that the red marbles in the bag are 6.However, this statement alone gives us no information about the no of green marbles. Hence statement I alone is not sufficient to answer the question.

Let us next look at statement II.

As per this statement, if we are to pull out 19 marbles from the bag, we would have at least 2 red marbles. Out of the 19 marbles removed, suppose 8 are blue. Now out of the remaining 11 marbles removed, if we have at least 2 red marbles, it would mean that the maximum possible no of green marbles removed is 9.This means that in all there are 9 green marbles in the bag.

Hence statement 2 alone is sufficient to answer the question.

Hence, **option 4.**

68. Looking at the initial statement, we know that mn < 100.

Looking at statement I, we get to know that the product mn has to be a multiple of 10 since it is divisible by 6 consecutive integers .So the product can be either 10, 20, 30 90

Now of all these numbers only 60 is divisible by 6 consecutive numbers i.e. numbers 1 to 6.60 can be expressed as a product of 2 nos. in the following ways : 1 × 60, 2 × 30, 3 × 20, 4 × 15, 5 × 12, 6 ×10

So from statement I alone we cannot determine values of m and n. Looking at statement II alone determine values of m and n as the only information provided to us is that "m + n" is a perfect square. So we can have numerous possibilities for m and n [e.g (7, 9), (2, 7), (1, 3) etc]

Combining both statements out of (1, 60), (2, 30), (3, 20), (4, 15), (5, 12), (6, 10), the only pair of values such that "m+n" is a perfect square is (6, 10). Hence both statements are required to answer the question.

Hence, **option 2.**

69. Total no of majors in Physics across all geographical locations = 18 + 36 + 80 + 40 + 23 + 28 = 225

Now students majoring in Physics account for 18% of all students

$\therefore$ 18% of all students = 225

We need to find the number of students which is 14% of all the students

$\therefore$ No of students majoring in Physics

$= \frac{14}{18} \times 225 = 175$

Hence, **option 5.**

70. Proportion of Physics Majors from Delhi

$= \frac{18}{225} \times 100 = 8\%$

As per the given data in the question, Proportion of Engineering Majors who are from Delhi is the same as the proportion of Physics majors who are from Delhi = 8%

(**Note :** In the given pie chart , the orange sector corresponding to "Engineering" and the sky blue sector

accounts for 30% of all students. In the question, no other information is provided about the individual percentage break up of students in Engineering and Other streams. It has been assumed that the percentage of Engineering Majors is twice the percentage of other Majors and taken to be 20%)

Now 20% of students have Engineering Majors

→ 18% of students with Physics Majors corresponds to 225 students

∴ 20% of students with Engineering Majors

corresponds to $\frac{20}{18} \times 225 = 250$ students.

Now as 8% of students with Engineering Majors are from Delhi it would mean that

$\frac{8}{100} \times 250$ or 20 students with

Engineering majors are from Delhi.

Hence, **option 3.**

71. As per the solution in a previous question 18% of the students who major in Physics

= 225

∴ Total no of students $= \frac{100}{18} \times 225 = 1250$

In all 12% students are economics majors which means total no of economics majors

$= \frac{12}{100} \times 1250 = 150$

Also, 12% of 1250 or 150 students are from Chennai.

To find the highest possible percentage of Economics Majors that can be from Chennai, let us assume that apart from the 40 students who major in Physics, all the remaining 150-40 or 110 students major in Economics

Highest possible percentage of Economics students that can be from Chennai

$= \frac{110}{150} \times 100 = 73.33\% \approx 73\%$

Hence, **option 4.**

72. In order to calculate the travel time between various stations let us take the time difference between departure and arrival of consecutive stations. Let us start with stations Zut and Yag.

Journey :Zut to Yag → Time Difference between Deaprture at Zut and arrival at Yag i.e. 6.00 am and 7.45 am in 1 hour and 45 minutes.

Journey Yag to Zut → Time difference between Departure at Yag and arrival at Zut i.e. 10.55 am and 12.40 pm is 1 hour and 45 minutes. Now as there is no difference in the time taken for the onward and return journey, it would mean that Zut and Yag are in the same time zone.

Likewise, we calculate the time difference between the departure at Yag and arrival at Vaq as 6 hours 55 minutes and the time difference between the departure at Vaq and at Yag as 10 hours 55 minutes. As the average speed of all trains is the same, it would mean that Yag and Vaq are in different time zones. To get the actual journey time of the train, we take average of these time differences, which comes out to be 8 hours 55 minutes. Now, the train journey between Yaq and Vaz is 8 hours 55 minutes. However, the local arrival time at Vaq is 6 hours 55 minutes after departure from Yag. This would mean that the Vaq local time 2 hours behind the local time of Yag.

Likewise, we calculate the time difference and journey time for the other 2 journeys i.e. Vaq to Sab and Sab to Raz.

We get the journey time from Vaq to Sab as 7 hours 50 minutes and Journey time between Sab and Raz as 3 hours 55 minutes. Further, Sab is 3 hours behind Vaq and Raz is 1 hour behind Sab.

As discussed earlier, Zut and Yag are in the same time zone.

Hence, **option 5.**

73. Journey time of train from Zut to Raz = 1 hour 45 mins + 8 hours 55 mins + 7 hours 50 mins + 4 hours 55 mins = 22 hours

25 mins

Waiting time at stations Yag,Vaq and Sab

= 5 + 5 + 5 =15 mins.

Total travel time between Zut to Raz

= 22hours 25 mins + 15 mins

= 22 hours 40 mins.

Hence, **option 2.**

74. As discussed Sab is 3 hours behind Vaq and Vaq is 2hours behind Yag. So in all Sab is 3+2 or 5 hours behind Yag. So if it is

12 noon at Sab, it will be 5 pm at Yag.

Hence, **option 1.**

Part I												Part II			
SECTION I				SECTION II				SECTION III				GK			
Q.	Ans.	Q.	Ans.	Q.	Ans.	Q.	Ans.	Q.	Ans.	Q.	Ans.	Q.	Ans.	Q.	Ans.
1	**2**	21	**5**	27	**2**	47	**1**	48	**2**	68	**2**	75	**2**	95	**2**
2	**4**	22	**3**	28	**3**			49	**1**	69	**5**	76	**4**	96	**2**
3	**1**	23	**3**	29	**3**			50	**2**	70	**3**	77	**5**	97	**2**
4	**3**	24	**5**	30	**1**			51	**2**	71	**4**	78	**1**	98	**5**
5	**5**	25	**3**	31	**2**			52	**1**	72	**5**	79	**3**	99	**2**
6	**4**	26	**4**	32	**1**			53		73	**2**	80	**4**		
7	**4**			33	**2**			54	**3**	74	**1**	81	**1**		
8	**4**			34	**4**			55	**1**			82	**4**		
9	**5**			35	**1**			56	**5**			83	**4**		
10	**5**			36	**2**			57	**5**			84	**3**		
11	**2**			37	**2**			58	**4**			85	**2**		
12	**1**			38	**3**			59	**1**			86	**4**		
13	**4**			39	**4**			60	**1**			87	**5**		
14	**1**			40	**4**			61	**4**			88	**2**		
15	**1**			41	**4**			62	**2**			89	**3**		
16	**3**			42	**1**			63	**4**			90	**5**		
17	**4**			43	**3**			64	**1**			91	**3**		
18	**2**			44	**2**			65	**1**			92	**4**		
19	**2**			45	**2**			66	**5**			93	**2**		
20	**4**			46	**5**			67	**4**			94	**4**		