

(Key and Solutions for AIMCAT1725)**Key****SECTION – I**

1. B	7. C	13. D	19. A	25. 35124	31. 1
2. C	8. D	14. A	20. C	26. 42531	32. D
3. D	9. B	15. B	21. B	27. 51432	33. C
4. C	10. C	16. D	22. C	28. 24315	34. B
5. A	11. D	17. D	23. D	29. 4	
6. B	12. A	18. C	24. A	30. 3	

SECTION – II

35. B	41. A	47. 36	53. 67	59. D	65. D
36. A	42. D	48. 12	54. 5	60. C	66. B
37. B	43. D	49. 18	55. C	61. A	
38. A	44. C	50. 26	56. B	62. D	
39. C	45. C	51. 82	57. A	63. B	
40. B	46. C	52. 376	58. D	64. A	

SECTION – III

67. C	74. A	81. 56	88. D	95. D
68. A	75. D	82. 25	89. 12,500	96. 6
69. C	76. 16	83. A	90. 3	97. 61
70. C	77. A	84. 75	91. 180	98. C
71. 60	78. 2	85. 23	92. 15	99. C
72. B	79. 75	86. D	93. 4	100. D
73. 2450	80. B	87. A	94. B	

Solutions**SECTION – I****Solutions for questions 1 to 6:****Number of words and Explanatory notes for RC:**

Number of words : 562

1. The passage suggests that white collar crimes are not characterized by physical force or violence. The author has mentioned in the second paragraph that people in general seem fascinated by white collar criminals, going by their reaction to some popular movies.

Statement A: The passage talks about possible definitions and classifications of white collar crime as well as procedures for its defence and its punishment. So, in a way, this suggests that the study of white collar crime by American criminologists may have evolved with time. Refer to the last sentence of the first para: Criminologists now categorize..... So choice A (that these movies depict the evolution of white collar crimes, per se) is incorrect.

Statement B: From the lines in the second para "For the layman fascinated by the white collar criminal" and "(Movies such as) The Sting, Wall Street, all involve aspects of white collar crime", choice B can be inferred to be true.

Statement C: The author wishes to state that white collar crime is no less a crime than crimes involving physical violence. So choice C is incorrect.

Statement D: Choice D cannot be inferred. There is no data to suggest that the severity of the crime may be reduced.

The victim of a white collar crime may suffer from mental agony just as the victim of any other crime.

Choice (B)

2. The reasons that make white collar crimes difficult to prosecute are given by the author in the third paragraph. Statement A: The fact mentioned in choice A cannot be inferred from the paragraph. The passage does not elaborate on "data on the socioeconomic status of offenders" as a limitation. Statement B: Retaining a criminal defense attorney may be true in the case of any other crime, not just a white collar crime. Choice B is not the correct answer. Statement C: In the third para, the author mentions that white collar crime is difficult to prosecute because it involves intelligent, educated perpetrators who have hidden their scams behind sophisticated shields, which may involve numerous companies, subsidiaries, and complex transactions. Choice C is the correct answer. Statement D: The beginning of the fourth para mentions that several agencies are dedicated to curtailing white collar crimes. So "...federal agencies, with their limited resources..." as given in choice D cannot be inferred. While the author has suggested in the third paragraph that investigating a case involving a white collar criminal is time consuming and burdensome, he has not suggested that white collar crime cases are not the first priority of the federal agencies.

Choice (C)

3. The passage expands on aspects of white collar crime including its definition, classification and methods to deal with it.

Statement A: Embezzlement or misappropriation of funds has been mentioned in the first paragraph as an example of white collar crime. So choice A will come in the category of a white collar crime and hence is not the answer.

Statement B: 'Person in a responsible position such as a CEO', who is a high-ranking official, has been mentioned under 'type of offender' in the categories of white collar crime, in the first paragraph. 'Breach of faith' has been mentioned in the second paragraph (deceit, concealment, or violation of trust) as a characteristic of white collar crime, according to the definition by FBI. So choice B comes under the purview of white collar crimes and hence is not the answer.

Statement C: The author has mentioned 'organized crime' and 'environmental corporate crime' in the first paragraph. Environmental law violations can be classified under "type of offense" and organised crime has been classified under "organizational culture". So choice C is not the answer.

Statement D: Vandalism and shoplifting involve physical force and violence and do not fall under the umbrella of white collar crimes. Choice D is the answer.

Choice (D)

4. Refer to paragraph 4 for the definitions of "witness", "target" and "subject".

"Targets" are individuals believed to be involved in the criminal act.

"Subjects" have undertaken suspicious behaviour, but are not yet considered criminally culpable.

"Witnesses" are individuals with information of interest to the grand jury.

Based on the above definitions, we can infer that X was the main individual involved in the criminal act. So he becomes the "target". Y did not take part but he would have information of interest to the grand jury. Hence he is the "witness". Z was part of the plan in the beginning but he may not yet be considered criminally culpable. So he is the "subject". More evidence would be required against him. "C" is the "victim".

Choice C has the correct classification and is the answer.

Choice (C)

5. Refer to the second and third sentences of the fifth paragraph. Entrapment occurs when law enforcement agents (or the persons involved in conducting the sting operation) induce or persuade an individual to undertake a crime that he had no **previous desire or intent** to commit. Once the defense of entrapment is asserted, the burden of proving that the defendant was not the victim of entrapment must be shown by the government beyond a reasonable doubt.

Situation 1: Since it is mentioned that X was 'lured and manipulated' into accepting a bribe we could reasonably assume that he did not himself seek a bribe in the first place. It would seem therefore that he was persuaded into accepting a bribe. Hence, the defendant's 'defense of entrapment' will be valid in this case. A situation was created and he was convinced into doing something against his intentions (at least he could claim that was the case). Since the police have arrested him, they will have the burden of proving that he was not the victim of entrapment but was actually involved.

Situation 2: The defense for entrapment will not work in the second case as the official Y is actually corrupt and was caught on video tape while actually committing a crime which was not orchestrated by the officials.

Choice (A)

6. One will have to carefully evaluate the statements for their veracity.

Statement A: Blue collar crimes are not discussed in the passage. Further, the passage does not state that entrapment is used only by white collar criminals. Hence this statement is not correct.

Statement B: There are various words and phrases mentioned in the passage to indicate that choice B is correct. Example in para 1: financial gain using some form of deception, by his wits alone, the criminal gets cash fraudulent schemes. Hence this statement is correct.

Statement C: In the last paragraph, the author suggests that white collar criminals are punished less severely than others owing to their high socioeconomic status and lack of any threat or violence, so statement C is incorrect.

Statement D: There is no such suggestion or course of action hinted by the author. On the other hand, the author mentions that white collar crime is very difficult to prosecute and that there are several complexities encountered in investigating the crimes, owing to the involvement of many companies, subsidiaries and complex transactions.

Choice (B)

Solutions for questions 7 to 12:

Number of words and Explanatory notes for RC:

Number of words : 499

7. The passage mentions that tipping "carries with it such a strong psychological pull that many consumers are unwilling to abandon it". One of the reasons for this is provided in the final paragraph.

Option A: Even though tipping constitutes 58% of the waiter's income, the passage does not mention this as a reason for abandoning tipping. It provides this statistic to emphasize that "there are considerable economic issues to untangle before tipping can be abolished". Hence, this is not a reason.

Option B: The passage mentions that correlation between tipping and better service was "minuscule". It also mentions that servers "ultimately have very little control over the gratuity they earn". Hence, we cannot infer from the passage that tipping ensures better service. Hence, this is not the correct reason.

Option C: The last paragraph of the passage mentions that "the customer gets to hold most of the power" when tipping and "that's not a feeling people are eager to let go of". It also says that tipping is a way of paying "a price that is closer to the service's true value". Since consumers are not willing to let go of this (illusion of) power, they are unwilling to abandon tipping. Hence, this can be a reason.

Option D: While there is a relation between the race/gender of the waiter and the tip, the passage does not mention this relation as a reason for consumers being unwilling to abandon tipping. Hence, this is not the correct answer.

Therefore, option C is the most likely reason why consumers are unwilling to abandon tipping.

Choice (C)

8. The author mentions that "tipping does provide at least the **illusion of control**". This is because, while the customer does not have any control over the service, tipping makes the customer believe that he has control.

Option A: While white waiters tend to receive higher tips than black waiters, we cannot compare whether the customer values the race of the waiter more than the service. Also, even if the statement mentioned in this option is true, it does not explain why the control is an illusion.

Option B: If the statement mentioned in the option is true, it would explain why the control is considered an illusion. However, this statement cannot be inferred from the passage and is not the reason why the author mentions that the control is an illusion.

Option C: The passage does not provide any examples in which the waiters demand higher tips. Hence, this cannot be the correct answer.

Option D: According to the passage, "there's decades' worth of consumer-psychology research demonstrating that tipping hardly improves service at all". Even if the consumer seeks to regulate the quality of service through tipping, he probably will not be able to. Hence, the control that the tipping provides is only an illusion.

Hence, option D is the right answer.

Choice (D)

9. According to the passage, "research in the previous decade suggested that servers could improve their tips by scrawling a little "thank you" or a smiley face on the bill, the latest studies are now showing the opposite". The paragraph talks about how some people tip the same regardless of service and some people vary tips depending on the smiley faces and thank you notes on the bill.

Option A: The paragraph mentions various factors which affect tipping by consumers. One of these factors is waiters drawing smiley faces on bills. The passage also mentions that customers tend to tip lower when smiley faces are drawn on bills, according to latest studies. Hence, waiters drawing smiley faces is one of the factors (having a positive or negative effect) and this option is incorrect.

Option B: If the customers realize that the waiters are manipulating them into providing higher tips, it can explain the inverse correlation between drawing smiley faces and customer tipping lower amounts. Hence, this can be a possible reason.

Option C: If the waiters draw smiley faces only when they expect higher tips, it does not explain why the customers are tipping lower amounts. Hence, this cannot be a reason.

Option D: If the customers have stopped noticing smiley faces, there would not be any correlation between the tips and the waiters drawing smiley faces. However, there is a negative correlation which this option cannot explain.

Hence, option B is the correct answer. Choice (B)

10. Option A: The passage mentions that "better service did indeed translate to a better tip, in other words, but the correlation was minuscule." However, according to *American Demographics*, "a quarter of Americans always tip the same percentage". This implies that even though some customers experience better service they tip the same. Hence, we can say that Better service does not necessarily result in better tips.

Option B: The passage mentions that "there's decades' worth of consumer-psychology research demonstrating that tipping hardly improves service at all". Hence, according to these researches, better tips do not necessarily result in better service.

Option C: None of the studies mentioned in the passage came to the conclusion that tips are independent of service provided. There is a little correlation between tips and service but they are not independent of each other. Also, according to *American Demographics*, a quarter of American tip the same. This is not sufficient to state that more often than not, tips are independent of service. Hence, this cannot be inferred from any of the studies mentioned in the passage.

Option D: According to *Sociological Inquiry*, tips are dependent on racial features. Hence, this is also a conclusion of a study mentioned in the passage.

Hence, option C is the right answer. Choice (C)

11. The passage mentions race as one of the factors (in *Sociological Inquiry*), gender as one of the factors (study of Lynn's) and service in a few cases. Hence, the answer is none of the above.

Choice (D)

12. According to Holland, when "the service quality is below what the customer expected, she can leave a smaller tip and pay a price that is closer to the service's true value." Therefore, the tip that a customer leaves is an indication of the service quality.

Option A: If people tip the same irrespective of the service, then it implies that the tip is not an indication of the service quality. Hence, this statement would weaken Holland's claim that the tip that a customer leaves is an indication of the service quality.

Option B: If race is a factor in determining the tips and not the service quality, then this would weaken Holland's claim. However, this statement does not imply that tips are independent of service quality. It only states that tips are also dependent on other factors like the waiter's race. Hence, this statement does not weaken Holland's claim.

Option C: This statement does not talk about service quality which is central to Holland's views mentioned in the passage. Hence, this statement neither weakens nor strengthens Holland's claim.

Option D: The strong psychological pull in tipping is not related to the claims made by Holland. Hence, this is not the correct answer.

Therefore, option A is the correct answer. Choice (A)

Solutions for questions 13 to 18:

Number of words and Explanatory notes for RC:

Number of words : 560

13. The passage mentions three roles that a writer assumes – that of a master, a benefactor and a pleasing companion.

Option A: "He that teaches us anything which we knew not before, is undoubtedly to be reverenced as a master." A pedagogue who teaches us something new is the role that the passage mentions here. Hence, this is not the correct answer.

Option B: "He that supplies life with innocent amusement will be certainly caressed as a pleasing companion". This can be considered to be the same as a story teller with amusing anecdotes. Hence, this is also not the correct answer.

Option C: "He that conveys knowledge by more pleasing ways, may very properly be loved as a benefactor". This can be considered to be the role of a friend who explains concepts in new ways. Hence, this is not the correct answer.

Option D: The passage mentions that some writers "lay two books before them, out of which they compile a third, without any new materials of their own". The author censures such writers further in the passage. Hence, this is the role that a writer need not assume.

Hence, option D is the right answer. Choice (D)

14. The passage mentions that "writers of extensive comprehension have incidental remarks upon topics very remote from the principal subject". Such remarks are very illuminating and compilers should try to compile such information in a single place.

Option A: The particles of science, in this case, refers to the "incidental remarks" which are very valuable. These remarks are "not promised in the title". Hence, these incidental remarks are found in unforeseen places. Therefore, the quotation refers to the deep insights hidden in unforeseen places.

Option B: The quotation does not refer to writers with extensive comprehension. Also, the passage does not mention that such writers are rare. Hence, this is not the right answer.

Option C: While such remarks are uncommon, it is not the remarks that the particles of science refer to. It refers specifically to the remarks made in works which are of a different principal subject. Hence, this is not the right answer.

Option D: The quote does not refer to any voluminous book. Even though such books may contain remarks on unrelated topics, the quote implies that such remarks are hard to find and not that such remarks must be searched in voluminous books. Hence, this is not the right answer.

Therefore, option A is the right answer. Choice (A)

15. According to the passage, "truth, like beauty, varies its fashions, and is best recommended by different dresses to different minds". The passage further states that "new topics of persuasion become necessary, and new combinations of imagery are produced".

Option A: The quote does not emphasize the importance of compilations which do not have any new material. The quotation implies that old information sometimes must be presented in new formats and in new ways. Hence, this is not the correct answer.

Option B: Different dresses to different minds implies information must be presented in a different way and must be explained differently from time to time. This dressing of

information is what the quotation refers to. Hence, this is the right answer.

Option C: The passage does not talk about the reader's perception of facts. It only talks about how new ways of presenting the information becomes necessary. Hence, this is not the right answer.

Option D: Reproducing the same information is not what this quotation talks about. Hence, this is not the right answer.

Hence, option B is the correct answer. Choice (B)

16. The passage mentions that "When the treasures of ancient knowledge lie unexamined, and original authors are neglected and forgotten, compilers and plagiaries are encouraged, who give us again what we had before, and grow great by setting before us what our own sloth had hidden from our view."

Option A: Writers not including information unrelated to their principal subject will not render compilation pointless to readers. It will only make it easier to find information and compilers will no longer have to dig through various volumes to compile difficult-to-find information. Hence, this will not make compilations pointless to readers.

Option B: Even if readers stop purchasing compilations, it will not render such books pointless. The reason why such books are popular is because of the reader's sloth, i.e., the reader's laziness in not being able to read a book thoroughly. Hence, this is not the right answer.

Option C: Encouraging new materials will not make compilations pointless. It will only increase the new material available to readers. Hence, this is not the right answer.

Option D: Reading existing material extensively and meticulously will bring to light what "our own sloth had hidden from our view". Since such compilations grow great through this, careful reading will make compilations pointless to readers.

Hence, option D is the right answer. Choice (D)

17. The passage mentions authors who are not be indiscriminately censured or rejected.

Option A: "He that recalls the attention of mankind to any part of learning which time has left behind it, may be truly said to advance the literature of his own age". Hence, a writer who manages to bring to light information in existing works which faded away with time need not be censured.

Option B: He that collects "incidental remarks" unrelated to principal subjects "under proper heads is very laudably employed, for, though he exerts no great abilities in the work, he facilitates the progress of others". Hence, a writer who compiles existing information from obscure sources to further facilitate original ideas need not be censured.

Option C: A writer that "supplies life with innocent amusement will be certainly caressed as a pleasing companion". Hence, a writer who writes childish stories need not be censured.

Option D: A writer who provides existing information without prudence "fill the world with books have any pretensions to the hope either of pleasing or instructing". Such authors should be censured as they do not add anything of value in writing their books.

Hence, option D is the right answer. Choice (D)

18. The author is of the opinion that "there ought to be some bounds to repetition."

Option A: Writing only new material without any old material will "contract his volumes to a few pages". Hence, the author does not recommend this and is not the correct answer.

Option B: "To exact of every man who writes that he should say something new would be to reduce authors to a small number". Hence, the author does not recommend this either.

Option C: According to the passage, "Libraries ought no more to be heaped forever with the same thoughts differently expressed, than with the same books differently decorated". We can say from this that books with same ideas are as unimportant (or as important) as same books with different designs. Hence, this is the correct answer.

Option D: The passage does not mention any relation between repeating materials and researching, unless of course the compilation includes a Hence, this cannot be inferred from the passage.

Therefore, option C is the correct answer. Choice (C)

Solutions for questions 19 to 21:

Number of words and Explanatory notes for RC:

Number of words : 629

19. The author uses the word counterintuitive to suggest something that defies common logic or understanding.

Choice(A): Since marine methane seeps are found at depths close to half a mile underwater, the fact that they could actually impact the earth's climate over the water surface is unexpected and can be said to be counterintuitive.

Choice(B): Marine seeps are far from barren and are said to be teeming with life. Hence this is incorrect. Besides, they are said to influence the climate of the earth and not the biological balance of the earth.

Choice(C): the discovery of marine methane seeps now would have no bearing on their influence over the earth's climate in the past. This statement is logically incorrect.

Choice(D): The author does not refer to the size of the microorganisms but instead goes on the talk about the diversity of life in methane seeps. Choice (A)

20. Choice (A): The microbial communities do not build themselves when the seep goes from active to dormant and neither do they bury when the opposite happens. This analogy is not correct.

Choice (B): Flounder means to fail. The microbial communities do not fail when an active seep goes dormant. This is incorrect.

Choice (C): When the seeps turn dormant, the microbial communities wait for a return to better times. This suggests a sort of hibernation. Further, when dormant seeps turn active, they are said to be able to respond quickly and consume the extra supply. This suggests a sort of hoarding behavior. Therefore choice C closely parallels the behavior of the microbes.

Choice (D): Extinguish mean to become extinct. The microbial communities do not become extinguished when an active seep goes dormant. This is incorrect.

Choice (C)

21. Choice (A): The study did find that there were many more kinds of microbial life living on the rocks than in the sediment.

Choice (B): The fact that seeps start and stop and move locations is something that was already known and this was not a finding from the study. This is the correct answer.

Choice (C): The study did find that microbes are recalcitrant (i.e., resistant/resilient) to seep quiescence (decrease) in seep activity, i.e., decrease in methane gas production. The word nutrition is appropriate since the microbes which are at the bottom of the food chain are said to feed directly on methane as their energy source. Throttling suggests a tune down or decrease in the availability.

Choice (D): The study did find that there were many more kinds of microbial life living in the seeps than were traditionally assumed.

Choice (B)

Solutions for questions 22 to 24:

Number of words and Explanatory notes for RC:

Number of words : 601

22. While facts about the exhibition at the Harry Ransom Center are mentioned in the second paragraph, the author's opinion on the same is cited in the third paragraph and the last paragraph. While it is good to talk about personal experience of the war, emphasizing on it does not give us the fuller context or the big picture.

Statement A: While the first part of choice A is correct (experience of the war from the point of view of its participants), the second part is incorrect. So choice A is not the answer.

Statement B: While this is factually correct, choice B does not provide the author's opinion. Hence it is incorrect.

Statement C: The author states that the exhibition emphasizes on personal experience and this emphasis is in keeping with our culture's current preoccupation with personal experience rather than larger historical understanding. The exhibition **occludes** (masks) the larger picture by not offering a fuller sense of context or an interpretation of the war's origins and effects. So choice C is correct.

Statement D: Choice D is distorted or rather inverted. The exhibition puts the personal experience of its participants and observers in a limelight and relegates the larger historical context of the war to the background. So choice D is incorrect.

Choice (C)

23. The author uses the phrase "seeks to recover the deeply personal experience of the war" in quotes at the end of the second paragraph. He again sets off the phrase "deeply personal experience" in quotation marks in the last paragraph. He elaborates on "personal experience" in various parts of the passage.

Statement A: While one use of quotation marks is to highlight sarcasm of the author, this is not the case in this passage. The author's tone is not extreme i.e. it is not one of contempt and sarcasm. So choice A is incorrect.

Statement B: The author does much more than just draws our attention to the text. So choice B is incomplete.

Statement C: From the use of "we are told" in the last sentence of para 2, we can infer that this is not the author's idea. So "though it is not his own" in choice C can be inferred to be true. But we are sure that the author finds "personal experience" of the war to have limitations as far as its influence is concerned. Refer to the third paragraph and the last paragraph which gives us the author's opinion on personal experience of the war.

Statement D: In the third paragraph, the author states that we are preoccupied with personal experience rather than larger historical understanding. The exhibition **occludes** (masks) the larger picture by not offering a fuller sense of context or an interpretation of the war's origins and effects. This view gets reiterated in the last paragraph: **this vision has its limitations** if "deeply personal experience" becomes the measure of things missing a broader historical perspective.

Choice (D)

24. The sentence "Before 1914, wars were also not typically presumed to be suspect before proven necessary" occurs in the fourth paragraph of the passage.

Statement A: "Before 1914, wars were not typically considered pointless, gratuitously violent enterprises; they could be foolish or misguided, but they were generally considered instrumental exercises of political power." This makes choice A correct.

Statement B: It is not merely ownership of nuclear weaponry that makes war a necessary evil today. Refer to the lines after the sentence in quotes in this question. "Now, with few exceptions, they often are. Of course, nuclear weaponry contributed to this change. And other qualifications are needed." So, choice B is wrong.

Statement C: "even though they were not necessary" in choice C makes it wrong. "Some wars will inspire widespread support; some will even be broadly seen as necessary" is true of modern times. But before 1914, wars were not pointless. Hence choice C is incorrect.

Statement D: Choice D goes off tangent. Rather than discussing "suspect and necessary", it goes on to discussing "innocence and guilt." So choice D does not provide, in essence, the meaning of the sentence in the question.

Choice (A)

Solutions for questions 25 to 28:

25. On a careful reading of the sentences, it can be observed that sentence 3 is a general sentence that begins the paragraph. It provides the context or background: the attitude of Hindi cinema towards literature. Sentences 3 and 5 form a mandatory pair. "For much of its history" in sentence 3 links with "Until the 1960s and 1970s" in sentence 5. Also, "... Hindi cinema took literature seriously" in sentence 3 links with "screenplays were often adapted from existing literary work" in sentence 5. Sentence 1 continues the thoughtflow. "later" in sentence 1

follows from "until the 1960s and 1970s" in sentence 5. And "this stream of literary inspiration" in sentence 1 refers to "existing literary work: plays, novels, short stories" in sentence 5. "the writer/ poet protagonist remained a figure" is a feature in sentence 1 that links with "screenplays were often adapted" in sentence 3. So, 351. It can be noticed that sentences 2 and 4 talk about the publisher. Sentence 2 with the contrast conjunction 'but' follows sentence 1. Sentence 4 portrays a negative point about the publisher and closes the paragraph. Hence, 35124. Overall, sentences 351 are positive in tone and sentence 4 is negative in tone. Sentence 2, through the contrast conjunction 'but' forms a bridge between the positive sentences 351 and the negative sentence 4.

Ans: (35124)

26. On a careful reading of the sentences, it can be observed that sentence 4 is a general sentence that begins the paragraph. It provides the background: ideas have helped mankind through numbers. It can also be observed that sentences 2 and 5 are linked together as they talk about the past. Also, sentence 5 has to follow sentence 2. "At this period" in sentence 5 links with "there must have been a time" in sentence 2. Also "subsisting precariously" and "difficulty in securing nourishment" in sentence 2 echoes with "disadvantages of his long infancy, his lessened agility, and his lack of hirsute protection against cold" in sentence 5. Sentence 4 which is the topic sentence is then followed by sentences 2 and 5. Sentence 3 follows sentence 5. "In those days" in sentence 3 refers to "at this period" in sentence 5. "throughout the ages" takes the discussion from past tense to the present age. Also "number of men must have been very small" and "mainly to increase the total population" in sentence 3 mirrors the idea of 'numbers' in the introductory sentence 4. So, 4253. Sentence 1 concludes the paragraph and the entire sentence offers an idea which refers to the latter half of sentence 3: throughout the ages, men have used their biological and technical skills mainly to increase the total population. Hence, 42531.

Ans: (42531)

27. On a careful reading of the sentences, it can be observed that sentence 5 which provides the name of the country Macau is the only general sentence that can begin the paragraph. The remaining sentences need a precedent and further substantiation. Sentences 5 and 1 form a mandatory pair. "My favourite moment in Macau" in sentence 5 links with "It takes place one windy winter day...." in sentence 1. Sentence 4 follows. It speaks about the area outside the Portuguese houses. Sentences 4 and 3 form another mandatory pair. "fisherman's boat" in sentence 4 links with "boat has been put on display for effect" in sentence 3. "picture-perfect sight leaves me blissed-out" in sentence 3 also substantiates "my favourite moment" in the topic sentence 5. Sentence 2 closes the paragraph. "pose against the charming backdrop of white and green houses" again reflects the exploration outside the preserved Portuguese houses. So, 51432.

Ans: (51432)

28. On a careful reading of the sentences, it can be observed that sentence 2 is a topic sentence or opening sentence of the paragraph. It introduces the topic of vitamin deficiencies and antioxidant supplementation. Sentences 2 and 4 form a mandatory pair. "controversial and experimental studies are often conflicting and inconclusive" in sentence 2 is contrasted by "Nevertheless, most of the data suggest" in sentence 4. Also "vitamin deficiencies can create difficulties in endurance training and recovery" in sentence 2 is further substantiated by "vitamin E is protective against exercise induced oxidative damage" in sentence 4. Sentence 3 follows sentence 4 with another use of vitamin E. Sentence 1 follows sentence 3 as "these effects" refer to the effects mentioned in sentences 4 and 3. So, 2431. Sentence 5 concludes the paragraph by mentioning other antioxidants (besides vitamin E). Both sentences 1 and 5 refer to increased amounts or supplementation of antioxidants. Hence 24315.

Ans: (24315)

Solutions for questions 29 to 31:

29. On a careful reading of the sentences, it can be observed that most of the sentences are written in appreciation of Agatha Christie. Sentence 3 is a general sentence that begins the paragraph. It introduces terms like "J. K. Rowling phenomenon" and the author Agatha Christie. Sentence 2 follows as "she" in sentence 2 refers to Agatha Christie mentioned earlier in sentence 3. "writer and the note: *plotting is not writing*" in sentence 2 connects with "In a Christie novel, everything is subordinate to the plot". Sentence 1 concludes with a final appreciation of Agatha Christie, crediting her for the classic detective story 'puzzler'. So, 3251. Sentence 4 is the odd man sentence as it discusses about supplementary characters in literature (which needs a precedent and substantiation) and runs tangent to the thoughtflow.

Ans: (4)

30. Sentence 4 is a general sentence that begins the paragraph. Sentence 2 follows as "these fields" in sentence 2 refers to "modern mind fields" in sentence 4. Sentence 1 then goes on to elaborate details about Nagel and what he stated in his publication *Mind & Cosmos*, introduced earlier in sentence 2. Sentence 5 furthers the idea. "much to the indignation of the philosophical intelligentsia" in sentence 5 in a way hints at "the chaos was on display in the ugliness" mentioned earlier in sentence 2. So, 4215. Sentence 3 cannot belong in the given sequence since it brings in a historical perspective on "objective reality" which is not the central focus of the given set of sentences.

Ans: (3)

31. On a careful reading of the sentences, it can be observed that either sentence 1 or 3 can begin the paragraph. The other sentences need a precedent and further substantiation. But the subject matter of the paragraph is affirmative action. Sentence 3 is a general sentence that begins the paragraph. It states the objective of affirmative action: to amend wrongs done to the minority Americans. This point is again reiterated in sentence 5: designed to increase the representation of minorities and women... underrepresented. So sentence 3 (Affirmative Action) is followed by sentence 5 (legal obligations of affirmative action). Sentence 4 continues the thoughtflow. "where they were previously underrepresented" in sentence 5 links with "long history of discriminatory practices" and "previously excluded groups" in sentence 4. So, 354. Sentence 2 summarizes the idea as an action point. Sentence 1 is the odd sentence out as it talks about managing diversity and how it is different from affirmative action. It deviates from the topic of discussion and leaves the thoughtflow incomplete. It can be a part of another paragraph that goes on to discuss "business case" for diversity.

Ans: (1)

Solutions for questions 32 to 34:

32. Choice A distorts the facts of the paragraph. Choice B is a very vague general idea of the paragraph and is too wide in scope to be considered an appropriate summary. Choice C includes points not mentioned in the paragraph. Choice D contains central points of the paragraph and constitutes a complete summary.

Choice (D)

33. Choice A does not include all the points mentioned in the paragraph. The second and third sentences of choice A are incorrect. While the first sentence in Choice B provides points which contrasts the situation where one forms first impressions, the second sentence wrongly calls first impressions 'judgmental' and has other distortions. "any room for ethnic stereotyping" is out of scope. Choice D gives extra information without covering the main points of the paragraph. Only choice C gives a comprehensive summary by stating the link between Malcolm Gladwell, initial impressions and how they are important. Hence, Choice C.

Choice (C)

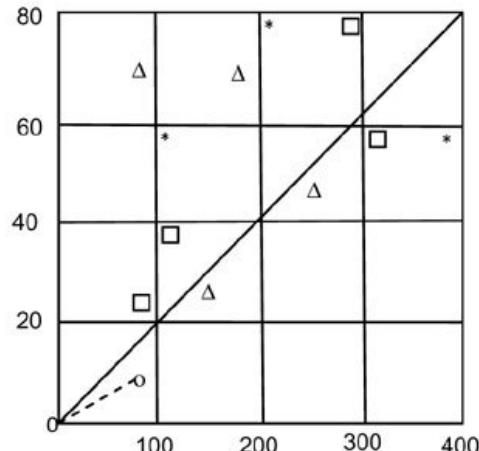
34. The message of the paragraph concentrates on the importance of the soul. Choices A and C are eliminated as they are incomplete. "Material scientists" in choice D is out of scope. Choice D summarizes part of the passage but does not stress on our ignorance of the knowledge of the soul. Hence, the answer is Choice B.

Choice (B)

Difficulty level wise summary - Section I	
Level of Difficulty	Questions
Very Easy	-
Easy	3, 6, 11, 15, 21,
Medium	2, 4, 5, 7, 8, 9, 12, 13, 14, 16, 17, 18, 19, 20, 25, 27, 28, 29, 30, 31, 32, 34
Difficult	1, 10, 22, 23, 24, 26, 33
Very Difficult	-

SECTION – II

Solutions for questions 35 to 38:



35. There are 7 companies which are above the diagonal.
∴ There are 7 companies which have sales more than 20% of its production.
Choice (B)
36. Only one company in sector B has sales less than 50 thousand and production more than 100 thousand.
Choice (A)
37. By observation there are two companies in sector 'C' which have production more than 100 thousand and sales more than 20% of the production. Therefore Aravind can select anyone of these two companies for his investment.
Choice (B)
38. The required company is the one which forms the least angle with the x-axis, when joined to the origin by a straight line. By observation, it is the company from Sector A.
Choice (A)

Solutions for questions 39 to 42:

	Q ₁	Q ₂	Q ₃	Q ₄
Total sales revenue	7500000	8000000	7000000	8500000
Taxes	1350000	960000	1050000	1700000
Net sales	6150000	7040000	5950000	6800000
Expenditure	5000000	6000000	4000000	6000000
Profit	1150000	1040000	1950000	800000
Profitability	0.19	0.15	0.33	0.12

39. The profitability of Ramprasad and Sons was the highest in the third quarter.
Choice (C)
40. The profit made by the company in Q₃ was equal to the sum of the profits in Q₁ and Q₄.
The profit made in Q₃ = ₹1950000.
The profit made in Q₁ and Q₄ = ₹(1150000 + 800000) = ₹1950000. We can check that the other options are not correct.
Choice (B)
41. The required percentage decreases
$$= \frac{1150000 - 800000}{1150000} \times 100 = 30.43\%$$

Choice (A)
42. The total tax paid by the company in 2009
$$= ₹(1350000 + 960000 + 1050000 + 1700000) = ₹5060000 = ₹50.6 \text{ lakhs.}$$

Choice (D)

Solutions for questions 43 to 46:

43. As we do not know the contribution of each of these sectors, we cannot determine when the growth rate of the industry as a whole.
Choice (D)

44. The growth rates for the different sectors are

$$\begin{aligned} \text{IT} &= 1.2 \times 1.3 \times 1.1 \\ \text{Oil and gas} &= 1.2 \times 1.3 \times 1.1 \\ \text{Automobiles} &= 1.15 \times 1.25 \times 1.30 \\ \text{Pharma} &= 1.05 \times 1.15 \times 1.35 \end{aligned}$$

By observation, we can see that the growth in Automobiles is greater than that in IT and Oil and gas. Between Automobiles & Pharma, Automobiles has the higher growth (since $1.25 \times 1.3 > 1.05 \times 1.35$). Hence, the answer is Automobile sector.
Choice (C)

45. If the turnover of the Oil and Gas sector in 2011 was x , the turnover in 2014 would be $x \times 1.2 \times 1.1 \times 1$. If the turnover of the Automobile sector in 2011 was y , the turnover in 2014 would be $y \times 1.25 \times 1.3 \times 1.1$.

The ratio of their turnovers in 2014 = $3 \times 1.2 \times 1.1 : 4 \times 1.25 \times 1.3 \times 1.1 = 3.96 : 7.16 = 10 : 18 = 5 : 9$.
Choice (C)

46. Assume that the sector which had the lowest growth in 2013, had the highest weightage in 2012, so that we end up with the lowest growth in 2013. So if we assume the Metal, IT and Oil and gas sector to have 25% weightage in 2012, the Automobile sector to have the majority of the rest of the weightage and the pharma sector to have only a minimum weightage.

The required growth rate would be the average of the four growth rates of each sector = $\frac{30+10+10-10}{4} = 10\%$

The turnover increased by at least 10% in 2013.
Choice (C)

Solutions for questions 47 to 50:

Given,

Arjun attempted 125 problems and got 67 points i.e., he already lost $60 \times 1/6 = 10$ points for unattempted problems and for every failure he loses another $4/3$ (1 mark of the question and $1/3^{\text{rd}}$ negative marks) points of this 115 points.

$$125 - 10 - \frac{4}{3}(F) = 67$$

$$F = 36$$

$$\text{Total successful attempts} = 125 - 36 = 89$$

$$\text{In Dupe, number of successful attempts} = 17 - 6 = 11$$

$$\text{Net score} = 11 - \left(6 \times \frac{1}{3}\right) - 18 \times \left(\frac{1}{6}\right) = 6$$

$$\text{Net score in Dance} = 12$$

$$\text{Number of failures in Digit} = 6$$

Now, sum of number of unattempted problems and successful attempts in Digit is 34 and as the total score in Digit is a integer, the number of unattempted problems must be a multiple of 6.

By trial and error,

$$\text{Number of unattempted problems} = 18$$

$$\text{Number of attempted problems} = 22$$

$$\text{Number of successful attempts} = 16$$

$$\text{Net score} = 11$$

$$\text{Number of failures in Dance} = 3$$

$$\text{Net score} = 12$$

By trial and error,

Number of unattempted problems, which must be a multiple of 6 = 12

$$\text{Number of successful attempts} = 15$$

$$\text{Now total successful attempts} = 89$$

$$\therefore \text{Number of successful attempts in Dice} = 17$$

$$\therefore \text{Number of failures} = 12$$

$$\therefore \text{Net score} = 12$$

$$\text{Number of failures in Dynasty} = 9$$

$$\text{Number of unattempted problems in Dynasty} = 6$$

Game	T.P	P.A	S.A	F	N
Dice	35	29	17	12	12
Dance	30	18	15	3	12
Dupe	35	17	11	6	6
Digit	40	22	16	6	11
Dynasty	45	39	30	9	26

T.P = Total Problems; P.A = Problems Attempted;
S.A = Successful Attempts; F = Failures;
N = Net score.

47. Ans: (36)

48. Ans: (12)

49. Ans: (18)

50. Ans: (26)

Solutions for questions 51 to 54:

The given weights are 87 kg, 82 kg, 67 kg and 54 kg. From statement (5), the weight of one among the five persons is 19 kg more than that of Hussey.

From statement (3) Hussey's weight is not 54 kg.

From statement (6) Andy's weight cannot be 67 kg and so must be 82 kg.

If we assume the weight of Hussey as 87 kg or 82 kg or 67 kg, the weight of the fifth person could be 106 kg or 101 kg or 86 kg. Since the weight of heaviest person is 87 kg, the weight of the fifth person cannot be 106 kg or 101 kg.

\therefore The weight of the fifth person is 86 kg.

\Rightarrow weight of Hussey is 67 kg.

\therefore The weights of the five persons are 87 kg, 86 kg, 82 kg, 67 kg and 54 kg not necessarily in that order Clarke is the heaviest, Bumrah is the second heaviest.

Therefore Clarke's weight is 87 kg and Bumrah's weight is 86 kg.

From statement (2), we get

Andy's weight is more than David's weight

\Rightarrow Andy's weight = 82 kg and David's weight = 54 kg

51. Andy weighs 82 kg. Ans:(82)

52. $87 + 86 + 82 + 67 + 54 = 376$ kg. Ans: (376)

53. Hussey weighs 67 kg. Ans: (67)

54. The second lightest person is Hussey, whose rank is 5. Ans: (5)

Solutions for questions 55 to 58:

55. From the given conditions, we have

$$\begin{array}{c} \underline{\underline{F}} \\ \underline{\underline{G}} \quad \underline{\underline{H}} \end{array}$$

F does not sit in the same row as J,

$$\begin{array}{c} \underline{\underline{I}} \quad \underline{\underline{F}} \\ \underline{J/C} \quad \underline{E, G} \quad \underline{H} \end{array}$$

\therefore I must sit in the same rows as F. Choice (C)

56. If E and D sit together, then we have the following possibilities:

$$\begin{array}{c} \underline{J, C} \quad \underline{F} \quad \underline{E, D} \\ \underline{I} \quad \underline{G} \quad \underline{H} \end{array}$$

\therefore F sits in the same row as C. Choice (B)

57. If B sits opposite H, then we have the following possibility:

$$\begin{array}{c} \underline{J, C} \quad \underline{F} \quad \underline{B} \\ \underline{I} \quad \underline{G} \quad \underline{H} \end{array}$$

\therefore Either C or J sit opposite I in any case. Choice (A)

58. From the given information we get the following arrangement

$$\begin{array}{c} \underline{\underline{F}} \quad \underline{J, C} \quad \underline{E, D} \\ \underline{G} \quad \underline{H, B} \quad \underline{\underline{ }} \end{array}$$

As, A can sit in either of the rows, hence this cannot be determined. Choice (D)

Solutions for questions 59 to 62:

As the total number of players are 48, from statement (c), it can be concluded that the number of players in each category is 12. From statement (f) and (e) we can conclude that the number of goal keepers, strikers, mid fielders and defenders from Barca are 3, 3, 4 and 3 respectively. From statement (e) it can be concluded that number of goal keepers from each team is 3. We have the following table.

	Barca	Multipool	Arsenal	Madrid	Total
Goal keepers	3	3	3	3	12
Strikers	3				12
Mid fielders	3				12
Defender	4				12
Total	13	11	13	11	48

As in each category Multipool and Madrid has sent only two players, writing down all possible combinations we get the following table:

	Barca	Multipool	Arsenal	Madrid	Total
Goal keepers	3	3	3	3	12
Strikers	3	2 3 3 4	3 3 3 3	3 3 3 3	12
Mid fielders	4	3 2 3 3	3 3 3 2	3 2 3 2	12
Defenders	3	3 3 2 3	4 4 3 2	3 2 3 1	12
Total	13	11	13	11	48

59. Number of defenders from Arsenal may be 3 or 4. So it cannot be determined. Choice (D)
60. As there are only two strikers from Multipool, there would be four strikers from Arsenal and so four defenders from Arsenal is not possible. Choice (C)
61. It is given that there are three mid fielders from Madrid from which it can be concluded that the number of defenders from Multipool is also three. Choice (A)
62. If there are three strikers for Multipool, then none of the given statements are true. Choice (D)

Solutions for questions 63 to 66:

Form (iii) Each of the four A, B, D and E have one attribute common with the person who owns the kind of vehicle, which no other person owns.

The person who owns a Mobike, i.e., C or F, must have exactly one attribute in common with each of A, B, D and E and these attributes must be the colour of dress i.e., Blue and status of employment i.e. "Employed".

Hence, C/F must be employed – Blue – Mobike. It is given that C did not wear Blue and A, B and F have one attribute common among them but it is not the color of dress they wear.

→ F is Employed – Blue-Mobike and A is Employed and B is Employed and D and E wear Blue.

Since, C and D must have at least two attributes in common the attributes must be vehicles and status of employment. Hence, C and D are both unemployed and have either scooters or bicycles. Hence, E must be the student.

∴ We now arrive at the following table.

	Colour	Employment	Vehicle
A		Employed	
B		Employed	
C		Unemployed	
D	Blue	Unemployed	
E	Blue	Student	
F	Blue	Employed	Mobike

It is given that the student does not have a bicycle, hence, E, the student, has a scooter.

∴ Both C and D cannot have scooters and they must have bicycles and as C does not have the same kind of vehicle as A, A has a scooter and B has a bicycle. As A and B have already one common attribute, i.e., employed, and B and C have one common attribute, i.e., bicycle, B must wear a different colour from A and C i.e. Green.

∴ A and C wear Red. The final table will be as follows.

Person	Colour	Employment	Vehicle
A	Red	Employed	Scooter
B	Green	Employed	Bicycle
C	Red	Unemployed	Bicycle
D	Blue	Unemployed	Bicycle
E	Blue	Student	Scooter
F	Blue	Employed	Mobike

63. F owns a Mobike. Choice (B)

64. The student wears a Blue dress. Choice (A)

65. F and A are a pair of employed persons. Choice (D)

66. B wears a Green dress. Choice (B)

Difficulty level wise summary - Section II	
Level of Difficulty	Questions
Very Easy	36
Easy	37, 39, 41, 43, 51, 52, 53, 54, 55, 56, 57, 58
Medium	35, 38, 40, 42, 44, 45, 46, 49, 50, 59, 60, 61, 62,
Difficult	47, 48, 63, 64, 65, 66
Very Difficult	

SECTION – III

Solutions for questions 67 to 70:

$$\begin{aligned} 67. \quad & x = 2 + 2^{2/3} + 2^{1/3} \\ & x - 2 = 2^{2/3} + 2^{1/3} \\ & \text{Cubing both sides, } x^3 - 8 - 6x^2 + 12x \\ & = 2^2 + 2 + 3 \cdot 2^{2/3} \cdot 2^{1/3} (2^{2/3} + 2^{1/3}) = 6 + 6(x - 2) \\ & \Rightarrow x^3 - 6x^2 + 6x - 2 = 0 \end{aligned}$$

Alternative solution:

Approximate value of $x = 2 + 1.6 + 1.3 = 4.9$. Upon inspection, only option C satisfies. One may also use the calculator to arrive at this value. Choice (C)

68. Suppose the maximum value is positive. Then as $x \geq y$, $x > y$ and $2y > 3x$
- $$\Rightarrow 3 \geq y > \frac{3}{2}x \Rightarrow x < 2, \text{ which is not possible (as } x \geq 3\text{).}$$

∴ The maximum value cannot be positive. However, $x = y$, the given expression is 0. ∴ The maximum value is 0.

Alternative solution:

Among the given options, option D is the highest. But, if $\frac{x-y}{2y-3x} = \frac{1}{3}$ then $6x = 3y$ which is not possible. The next

highest value is 0, which implies $x = y$. Since this is possible, the answer is Choice (A). Choice (A)

$$\begin{aligned} 69. \quad & prt : qsu = \frac{prt}{qsu} \\ & \left(\frac{p}{q} \right) \left(\frac{r}{s} \right) \left(\frac{t}{u} \right) \end{aligned}$$

$$\begin{aligned} & \left[\left(\frac{p}{r} \right) \left(\frac{r}{t} \right) \left(\frac{t}{q} \right) \right] \left[\left(\frac{r}{t} \right) \left(\frac{t}{q} \right) \left(\frac{q}{s} \right) \right] \left[\left(\frac{t}{q} \right) \left(\frac{q}{s} \right) \left(\frac{s}{u} \right) \right] \\ & = \left(\frac{2}{3} \right) \left(\frac{8}{9} \right) \left(\frac{3}{4} \right) \left(\frac{8}{9} \right) \left(\frac{3}{4} \right) \left(\frac{4}{3} \right) \left(\frac{3}{4} \right) \left(\frac{4}{3} \right) \left(\frac{3}{2} \right) \\ & = \frac{2}{3} \left(\frac{8}{9} \right)^2 \left(\frac{3}{4} \right) \left(\frac{3}{2} \right) = \frac{16}{27} \end{aligned}$$

Alternative solution:

Let $p = 48$ (a common multiple of 2 and 3, that can make all the variables integers)

$$\begin{aligned} & \Rightarrow r = \frac{3}{2} p = 72; t = \frac{9}{8} r = 81; q = \frac{4}{3} t = 108; s = \frac{3}{4} q = 81; u \\ & = \frac{2}{3} s = 54 \\ & \Rightarrow \frac{prt}{qsu} = \frac{48 \cdot 72 \cdot 81}{108 \cdot 81 \cdot 54} = \frac{16}{27}. \end{aligned}$$

Choice (C)

70. The trader gives a discount of 10% when 5 articles are bought and a discount of 12.5% when 8 articles are bought.

Given the profit is the same.

$$\Rightarrow 5(0.9 MP - CP) = 8(0.875 MP - CP) \Rightarrow \frac{MP}{CP} = \frac{6}{5}$$

Choice (C)

Solution for question 71:

71. The average age of the 5 brothers in 1995 is 45 years. If they all survive up to 2007, their average age would be 57 years in 2007.

But, since one of them died in 2002 at the age of 40 yrs, his age would have been 45 yrs in 2007. In 2007, the total age of the 5 brothers would have been $5(57) = 285$ yrs. From this, if we subtract the age the deceased would have attained, we get the total age of the 4 surviving brothers. So, the total age of the 4 brothers is $285 - 45 = 240$ yrs. Hence their average is 60 yrs.

Ans:(60)

Solution for question 72:

72. The graph can be understood as a function involving modulus $f(x) = -|x|$

Now $f(-x) = -|-x| = -|x|$

Thus, $f(x) = f(-x)$.

Alternatively, since the graph is symmetric about the y-axis, $f(x)$ will be equal to $f(-x)$

Choice (B)

Solution for question 73:

73. There are 9000 four-digit numbers. Of these 4500 are odd. Of these, in 2250 numbers, the tens digit is even. We have to count all these. Of the other 2250 numbers, the thousands and the hundreds digits can be 12, 23, 34....89, i.e. there are 8 possibilities, while for the tens and the units digit there are 5 possibilities each (1, 3, 5, 7, 9). Altogether, there are $8(5)(5)$ or 200 numbers. Thus there are 2450 numbers in all.

Ans:(2450)

Solutions for questions 74 and 75:

74. Let C be the number of correct answers and W be the number of wrong answers.

$$4C - W = 124$$

$$\Rightarrow C = \frac{124 + W}{4}$$

Number of questions attempted = $C + W$

$$= 31 + \frac{W}{4} + W = 31 + \frac{5W}{4}$$

So, W is multiple of 4 and $5\left(\frac{W}{4}\right)$ is a multiple of 5. The possible values of $(C + W)$ are 31, 36, 41, 46, Considering the choices, only 41 is possible.

Choice (A)

$$\sqrt[5]{x} < \sqrt[3]{x} < x.$$

These conditions hold for $1 < x$ and also for $-1 < x < 0$.

$$\text{For example consider } x = \left(\frac{-1}{2}\right)^{15} = \frac{-1}{2^{15}}$$

$$\sqrt[5]{x} = \left(\frac{-1}{2}\right)^{\frac{15}{5}} = \frac{-1}{2} = \frac{-4}{32} \text{ and } \sqrt[3]{x} = \left(\frac{-1}{2}\right)^{\frac{15}{3}} = \frac{-1}{32}$$

$$\text{We have } \frac{-4}{32} < \frac{-1}{32} < \frac{-1}{2^{15}} \text{ i.e., } \sqrt[5]{x} < \sqrt[3]{x} < x.$$

Choice (D)

Solution for question 76:

76. Let the obtuse angle be a , and the acute angles be b and c . Now, given that

$$a - b = 20 \Rightarrow a = 20 + b \text{ and}$$

$$b - c = 56 \Rightarrow c = b - 56$$

$$\text{Also, } a + b + c = 180 \Rightarrow (20 + b) + b + (b - 56) = 180$$

$$\Rightarrow 3b = 216 \text{ or } b = 72 \Rightarrow a = 20 + 72 = 92$$

$$\text{and } c = 72 - 56 = 16$$

Ans:(16)

Solution for question 77:

77. 12 do not like pulav; 10 carried pulav

$\therefore 20 - 12 = 8$ like pulav but 10 carried pulav.

$10 - 8 = 2 \Rightarrow$ at least two, who do not like pulav carried it.

Choice (A)

Solutions for questions 78 and 79:

78. At the moment the shortfall is discovered, let there be x days worth of provisions left.

Now $3x - x$ i.e., $2x$ extra days worth of provision lasts for the 12 additional days.

$\Rightarrow 3x$ lasts for 18 days; i.e., 18 days are left for the month to end. But if the provisions are only doubled and the strength becomes $3/4^{\text{th}}$, then the provisions will last only for $12 \times 4/3 = 16$ days, i.e., a shortfall of $18 - 16 = 2$ days

Ans:(2)

79. 300 kg of fresh dates contain 240 kg water

$\Rightarrow 60$ kg is non-water.

$\Rightarrow 60$ kg is 80% of dried grape.

Weight of dried grapes

$$= \frac{60}{80\%} = \frac{60 \times 5}{4} = 75 \text{ kg}$$

Ans:(75)

Solution for question 80:

80. It can be observed that

$$\frac{x^5}{x^7 + 5x^2 + 1} = \frac{1}{\left(x^2 + \frac{1}{x^5} + 1\right)} \quad (= Y \text{ say}).$$

Hence all the terms of the form $\log(Y) + \log\left(\frac{1}{Y}\right)$

$= \log Y - \log Y = 0$. Hence the given expression simply equals $x^5 + \frac{1}{x^5} + 5$.

Choice (B)

Solutions for questions 81 and 82:

81. Let the number which 952 divides be N.
 So $N = 952q + 124$ where q is the quotient.
 So $N = 68(14q + 1) + 56$.
 When 68 divides N, the quotient would be $14q + 1$ and the remainder will be 56.
 Ans:(56)
82. Lets assume that the total distance is $8k$ km. 37.5% is $3k$ km and 12.5% is k km.
 The data is tabulated below.

Distance (in km)	$3k$	k	$4k$	$8k$
Speed km/hr	15	25		20
Time	$\frac{k}{5} = \frac{5k}{25}$	$\frac{k}{25}$		$\frac{8k}{20} = \frac{10k}{25}$

We can see that the time required for the remaining part of $4k$ km is $\frac{4k}{25}$ hours.

∴ The speed is 25 km/hr. Ans:(25)

Solution for questions 83:

83. If A gives to B one-third of what B has, the quantity (or number) with B gets multiplied by $4/3$ or the initial quantity is $3/4$ of the final.

As the transaction takes place twice for each person and since the final number with all is the same, it will be convenient to take the final number as 64. (16 will lead to fractional values).

We can tabulate the number of coins with A, B, C at the 4 stages. We start at the bottom and work upward.

	A	B	C
Initial	75	63	54
After A gives	36	84	72
After B gives	48	48	96
After C gives	64	64	64

The ratio of the number of coins with A, B, C at the beginning is $75 : 63 : 54 = 25 : 21 : 18$

Alternative solution:

The choices (A) through (D) can each be considered and the question can be solved by the substitution and elimination approach. Choice (A)

Solutions for questions 84 and 85:

84. Percentage of students, in class VII or below = $31.25 + 12.50 + 18.75 = 62.5\%$
 This is equal to 250

$$\Rightarrow \text{Total strength of the school} = \frac{100}{62.5} (250)$$

$$= \frac{8}{5} (250) = 400$$

∴ The number of students in the category upto class V

$$= \frac{31.25}{100} (400) = 125 \text{ students}$$

Ratio of number of girls to boys = 3 : 2

$$\therefore \text{The number of girls in this category} = \frac{3}{5} \times 125 = 75$$

Ans:(75)

85. The sum found by the student who wrote the numbers $= [1 + 2 + 3 + \dots + N]$
 Sum found by the student who erased the least number $= [2 + 3 + \dots + N]$.
 Sum found by the student who crossed the next least number $= [3 + \dots + N]$.
 Sum found by the student who crossed the number $N - 1 = N$.
 Total of the sums found by the students $= [1 + 2 + 3 + \dots + N]$

$$\begin{aligned} & N] + [2 + 3 + \dots + N] + [3 + \dots + N] + [N] \\ & = 1 + 2(2) + 3(3) \dots N(N) \\ & = 1^2 + 2^2 + 3^2 \dots N^2 \\ & = \frac{N(N+1)(2N+1)}{6} \\ & \therefore \frac{6}{N} = 188 \end{aligned}$$

$$\therefore (N+1)(2N+1) = 1128 = (24)(47)$$

Comparing the two sides,
 $N+1 = 24 \Rightarrow N = 23$.

Ans:(23)

Solutions for questions 86 to 88:

86. From statement I, $ab + c^2$ is odd implies the following cases

	a	b	c	$ab + c^2$	$Ab^2 + 2bc + a^2c$
1	Even	Even	Odd	Odd	Even
2	Even	Odd	Odd	Odd	Even
3	Odd	Even	Odd	Odd	Odd
4	Odd	Odd	Even	Odd	Odd

Therefore we cannot say if $ab^2 + 2bc + a^2c$ is even or odd from the statement I. Thus statement I alone is not sufficient.

From statement II, $bc + a$ is odd implies the following cases.

	b	c	a	$bc + a$	$ab^2 + 2bc + a^2c$
1	Even	Even	Odd	Odd	Even
2	Even	Odd	Odd	Odd	Odd
3	Odd	Even	Odd	Odd	Odd
4	Odd	Odd	Even	Odd	Even

Thus from statement II, we cannot say if $ab^2 + 2bc + a^2c$ is even or odd. Therefore statement II alone is not sufficient. Even by using both the statements together, we cannot determine if $ab^2 + 2bc + a^2c$ is even or not.

Thus the question cannot be answered even by using both the statements together. Choice (D)

87. Let the cost of each mango, apple and pineapple (in rupees) be m, a, p respectively.

$$9m + 4a + 6p = 114 \dots (i)$$

$$4m + 6a + 9p = 114 \dots (ii)$$

$$3(i) - 2(ii) \text{ gives } 19m = 114$$

$$\Rightarrow m = 6$$

$$\therefore \text{cost of five mangoes} = ₹30$$

Choice (A)

88. Let total adult population of town = T

$$\Rightarrow \text{Adult population that is male} = 0.6T$$

$$\text{Adult population that is female} = 0.4T$$

$a\%$ of adult male population and $b\%$ of adult female population is educated.

Given, educated adult males + uneducated adult females = Sum of uneducated adult males + Educated adult females

$$\Rightarrow 0.6T \times \frac{a}{100} + 0.4T \times \frac{(100-a)}{100} = 0.6T \times \frac{a}{100} + 0.4T \times \frac{b}{100}$$

$$= \frac{0.6T(100-a)}{100} + \frac{0.4Tb}{100} \Rightarrow 3a - 2b = 50$$

Only Choice (D) satisfies the above equation.

Alternative solution:

Both the quantities – educated males plus uneducated females and uneducated males plus educated females – are equal to 50% each. Substituting the values of a and b from the options in $0.6T \times \frac{a}{100} + 0.4T \times \frac{(100-a)}{100}$ (or the other expression), we find that only for option D, the value becomes 0.5T. Choice (D)

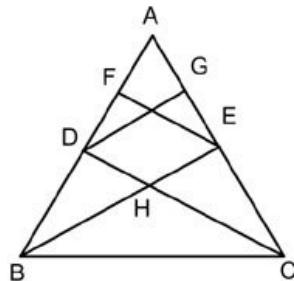
Solutions for questions 89 to 93:

89. ₹80 = interest on SI for 1 year
 $\Rightarrow ₹80 = r\% \text{ of } 1000$
 $\Rightarrow r = 8$
 Now if 8% of S = 1000
 $S = 12,500$ Ans:(12,500)

90. The number of members in C₁ on November 2, 2005
 $= x + 4y = x + 4(20x) = 81x.$
 Number of members in C₂ on November 2, 2005
 $= x(z)^4$
 $\therefore x(z)^4 = 81x \Rightarrow z = 3$ Ans:(3)

91. Let the three numbers be 3a, 3b and 3c. As HCF (3a, 3b) = HCF (3b, 3c) = HCF(3a, 3c) = 3
 \Rightarrow The LCM of the three numbers = 3abc
 The product of the numbers = 27abc = 9(3abc) = 1620
 $\therefore 3abc = \frac{1620}{9} = 180$
 \therefore The LCM of the three numbers is 180. Ans:(180)

92.



D is the midpoint of AB. FE is parallel to DC. As E is the midpoint of AC, F is the midpoint of AD, i.e., AF/AB = 1/4. Similarly AG/AC = 1/4. AB = 16 cm \Rightarrow AF = 4 cm
 $AC = 20 \text{ cm} \Rightarrow AC = 5 \text{ cm}$
 \therefore Perimeter of $\triangle AFG = (4 + 5 + 6) = 15 \text{ cm.}$ Ans:(15)

93. Lady's age = 10x + y : Husband's age = 10y + x
 $\Rightarrow 11(x + y) = 77 \Rightarrow x + y = 7$
 Difference = 9(y - x) $\leq 15 \Rightarrow y = x$ or $y - x = 1$
 $y = x$ not possible as the ages are different.
 If $y - x = 1$, then $y = 4, x = 3$ Ans:(4)

Solutions for questions 94 and 95:

94. We list the 4 mixed surds below, in the increasing order of their rational parts.

$$9 + \sqrt{45}$$

$$10 + \sqrt{40}$$

$$11 + \sqrt{35}$$

$$12 + \sqrt{30}$$

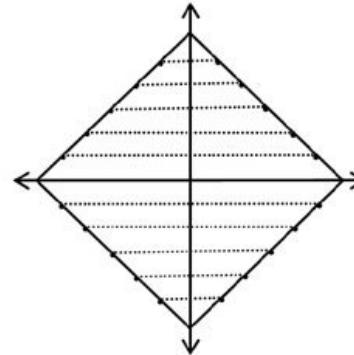
The rational part increases by 1 successively, but the irrational part decreases by less than 1.
 \therefore The surds listed above are in the increasing order and $12 + \sqrt{30}$ is the greatest. Choice (B)

95. $2x + 3y + 4z = 33 \quad \dots (1)$
 $4x + 2y + 3z = 29 \quad \dots (2)$
 $3x + 4y + 2z = 28 \quad \dots (3)$
 $(1) + (2) + (3)$
 $\Rightarrow 9(x + y + z) = 90 \Rightarrow x + y + z = 10$
 \therefore Choice (A) is consistent.
 Accordingly (1) + (2) gives Choice (B)
 And (1) - (2) gives choice 3
 While (2) + (3) - (1) gives
 $5x + 3y + z = 24$
 but choice (D) reads as $5x + 3y + z = 23$ which is not consistent. Choice (D)

Solutions for questions 96 and 97:

96. If the man's cycling speed changes from 8 km/hr to 12 km/hr, his speed becomes $(3/2)$ times.
 \therefore His time of travel would decrease to $(2/3)$ times or decrease by $(1/3)$ of the original time. This decrease is 2 hours.
 \therefore Original time = $(3)(2) = 6$ hours
 \therefore His starting time = 6:00 a.m.
 If he must reach his destination at 2:00 p.m., his travel time = 8 hours.
 His speed must be $\frac{6}{8}(8) = 6 \text{ km/hr.}$ Ans:(6)

97.



The points that satisfy the given condition lie in the square with vertices at (6, 0), (0, 6), (-6, 0) and (0, -6). In each quadrant there are 10, i.e., 40 points in all with integral coordinates. On each of the 4 rays (the positive and negative x axis and the positive and negative y axis). There are 5 points i.e. 20 points in all. The origin also has integral coordinates. Thus there are $40 + 20 + 1$ or 61 points in all.

Ans:(61)

Solutions for questions 98 to 100:

98. Let $2x^2 + 3y^2 - 4x - 12y + 18$ be denoted by E.
 $E = 2(x^2 - 2x) + 3(y^2 - 4y) + 18$
 $= 2(x-1)^2 + 3(y-2)^2 + (18 - 2 - 12)$
 $= 2(x-1)^2 + 3(y-2)^2 + 4$
 Since the minimum value of $(x - 1)^2$ and $(y - 2)^2$ is independently 0 each, the minimum value of E is $0 + 0 + 4 = 4.$ Choice (C)

99. Sum of first thirteen terms = $13 \times$ middle term
 $= 13 \times$ seventh term (say s) = 13s
 Sum of first twenty five terms = $25 \times$ middle term
 $= 25 \times$ thirteenth term (say t) = 25t
 \therefore Sum of the next twelve terms after the first thirteen terms
 $= 25t - 13s$ given $\frac{13s}{25t-13s} = \frac{26}{49} \Rightarrow \frac{t}{s} = \frac{3}{2}$ Choice (C)

100. Some of the triplets of prime numbers in which the terms are in arithmetic progression are 3, 5, 7; 3, 7, 11; 3, 11, 19; 3, 13, 23 etc. Choice (D)

Difficulty level wise summary - Section III	
Level of Difficulty	Questions
Very Easy	-
Easy	69, 70, 71, 72, 76, 79, 80, 81, 82, 83, 84, 89, 90, 91, 93, 94, 100
Medium	67, 68, 73, 74, 75, 77, 78, 86, 87, 88, 92, 95, 96, 97, 99
Difficult	85, 98
Very Difficult	-