

184. 2                    185. 2                    186. 1  
187. 4                    188. 4  
189. 1; Substitute century.  
190. 2; Substitute me.  
191. 4; Substitute are.  
192. 4; Substitute that for because.  
193. 3; Substitute had been.  
194. 1                    195. 2                    196. 3  
197. 3

198. 2; If you go through the sentences, it becomes clear that the paragraph is a description of B, which should therefore come as the introductory sentence. Thus 1 and 4 are eliminated. Now, "Poland" is on the "eastern front". This

gives us ED as a sequence. And "Britain" is in the "west". Which gives us AC as a sequence. Hence 2 is preferred to 3.

199. 1; 4 is ruled out because C and D both start with "Bush" and hence cannot come one after another. Now, should the paragraph start with C or D? It should be C because D is just a subsidiary sentence. Hence 2 is ruled out. We prefer 1 to 3 because E is an explanation for A. Grammatically too, 1 makes sense: C (Bush), A (he), E (a CEO ...), D (Bush) and B (he). Remember the use of pronouns is very important.
200. 1; Note the use of "therefore" in E. We therefore look for the sentence having the reason of E. Which is B. Thus BE is a sequence.

## Management Aptitude Test

### December 2006

**Directions (Q. 1-5): Answer the questions on the basis of the information given below.**

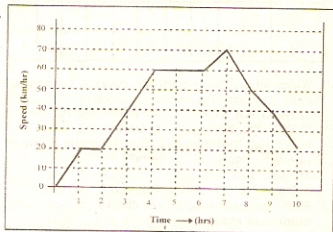
Students of Vidya Vihar School appeared in their Class XI examination in five subjects—Physics, Chemistry, Maths, Botany, and Zoology. Some boys and some girls did not appear in some subjects due to some reason. The following table shows the no. of boys and the no. of girls in different intervals of marks obtained. The maximum marks in each of the subjects is 100. The least number of students who did not appear in any one of the subjects is 5 and the maximum no. of students who did not appear is 15. It is also known that not all students who have appeared fail all the subjects.

Subjects ↓	Marks obtained out of 100									
	0-20		20-40		40-60		60-80		80-100	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Physics	9	7	13	16	17	14	38	19	17	23
Chemistry	12	11	11	10	19	18	48	16	29	26
Mathematics	15	7	9	9	20	17	35	21	41	27
Botany	10	9	14	12	18	15	34	28	39	22
Zoology	9	8	15	10	17	15	36	20	38	30

- Find the maximum number of students in Class XI of Vidya Vihar school.  
1) 215                      2) 208  
3) 216                      4) 213
- If in order to qualify in the examination one has to secure a minimum of 60% marks in either Physics or Mathematics, find the least number of students who have qualified the examination.  
1) 117                      2) 124  
3) 208                      4) None of these
- Find the maximum possible no. of boys in Class XI of the school.  
1) 130                      2) 134  
3) 135                      4) 129
- Find the minimum number of students in Class XI of the school.  
1) 198                      2) 203  
3) 206                      4) 208

- If the number of girls in Class XI of the school is 86, in how many subjects is the number of boys who did not appear for the exam more than the number of girls who did not appear for the same exam?  
1) 4                              2) 2  
3) 3                              4) Can't say

**Directions (Q. 6-9): Study the following graph and answer the questions given below.**



- The average speed represented above was  
1) 30 km/hr                      2) 37 km/hr  
3) 43 km/hr                      4) 49 km/hr
- Considering two-hour slots from the beginning, the second highest distance covered in a two-hour slot was between  
1) 0-2 hrs                      2) 2-4 hrs  
3) 4-6 hrs                      4) 6-8 hrs
- The highest rate of acceleration was  
1) 25 km/hr<sup>2</sup>                      2) 20 km/hr<sup>2</sup>  
3) 15 km/hr<sup>2</sup>                      4) 10 km/hr<sup>2</sup>
- If the rate of deceleration of the 8th hour had continued, the speed would have become zero at  
1) 9 hrs 10 mins                      2) 10 hrs 30 mins  
3) 11 hrs 10 mins                      4) None of these

**Directions (Q. 10-13): Study the caselet given below and the table following it carefully and answer the questions given thereafter.**

In a 5-year Management Course, students studying in 2nd year are asked to select four optional subjects from the given seven optional subjects. There

are ten students whose Roll Numbers are from 1 to 10. They have selected four optional subjects each. Their subjects selected are indicated by "Y" mark.

Courses	Roll Numbers									
	1	2	3	4	5	6	7	8	9	10
TA	Y		Y	Y		Y		Y	Y	Y
MBCA		Y	Y		Y	Y		Y		
YCA			Y			Y	Y		Y	Y
DMBC	Y	Y		Y	Y		Y	Y		
XA		Y					Y		Y	Y
PG	Y		Y	Y	Y		Y	Y		
PM	Y	Y		Y	Y	Y			Y	Y

- Which of the following triple courses have maximum number of students in common?  
1) TA, MBCA, YCA      2) DMBC, TA, PG  
3) YCA, PM, XA      4) DMBC, PG, XA
- Which Roll Numbers have the maximum common number of optional subjects?  
1) 1 and 8      2) 3 and 6  
3) 9 and 10      4) 2 and 5
- Which optional subject was chosen by maximum number of students?  
1) XA      2) TA  
3) MBCA      4) DMBC
- Which Roll Numbers have the same optional subjects?  
1) 3 and 6      2) 1 and 3  
3) 6 and 8      4) 9 and 10

**Directions (Q. 14-17): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer as**

- if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- if the data either in statement I alone or in statement II alone are sufficient to answer the question.
- if the data even in both statements I and II together are not sufficient to answer the question.

- k is a positive integer. Is k a prime number?

I. No integer between 2 and  $\sqrt{k}$  inclusive divides k evenly.

II. No integer between 2 and  $k/2$  inclusive divides k evenly and k is greater than 5.

- Is  $x^2 : y^2 < 1$ ?

I.  $(y - x)(x + y) = 40\%$  of  $60 - 120\%$  of 20.

II.  $x < y$ .

- By selling a product for Rs 100 how much profit was earned?

I. 20% profit would have been earned if it had been sold for Rs. 90.

II. The profit was one-third of the purchase price.

- What is the rate of CI on a sum of money?

I. The difference between CI and SI at the same rate of interest for two years is Rs 43.20 and SI at the end of five years is Rs 3600.

II. The difference between CI and SI at the same rate of interest on Rs 12,000 for 3 years is Rs 132.19.

**Directions (Q. 18-22): The following questions are accompanied by three statements (A), (B), and (C). You have to determine which statement(s) is/are sufficient/necessary to answer the questions.**

- How much minimum marks is required to pass an examination?

A. Student A secured 38% marks in the examination and failed by 8 marks. Student B secured 42% marks in the same examination and got 12 more than the minimum pass marks.

B. Student A secured 35% of the total marks in the examination and failed by 23 marks. If he had secured 25 more marks his percentage of marks would have been 40%.

C. A student will be declared passed if he secures 39.60% of the total marks.

1) Any two of them      2) Only A

3) C and either A or B      4) Either A or B only

- What will be the share of R in the profit earned by V, R and A together?

A. They together invested an amount of Rs 54,000 for a period of one year.

B. R's investment was 25% less than V's and 50% more than A's.

C. The profit of V is Rs 4,000 more than that of A.

1) Only A and B together

2) B and either A or C only

3) Only B

4) Only B and C together

- What was the profit earned on the cost price by Mahesh by selling an article?

A. He got 15% concession on labelled price in buying that article.

B. He sold it for Rs 3,060.

C. He earned a profit of 2% on the labelled price.

1) Only A and B together are required

2) Only B and C together are required

- 3) Only either A or C and B together are required  
 4) All A, B, and C together are required
21. 15 men and 20 women work together for 5 days and then 5 men and 8 women leave the group. In how many days will the remaining work be finished by the remaining people?  
 A. 10 men and 15 women together can complete

the work in  $17\frac{1}{7}$  days.

- B. The work done by 1 man is equal to the work done by 2 women.  
 C. 20 men alone can do the entire work in 15 days.
- 1) Any one of them      2) Either A or C  
 3) Only B                4) Any two of them
22. What is the cost of flooring a rectangular hall?  
 A. The length and the breadth of the hall are in the ratio 3 : 2.  
 B. The length of the hall is 48 metres and the cost of flooring is Rs 850 per square metre.  
 C. The perimeter of the hall is 160 metres and the cost of flooring is Rs 850 per square metre.
- 1) Only A and B                2) Only A and C  
 3) Only C                        4) Any two of the three

**Directions (Q. 23-25): A word arrangement machine, when given a particular input, rearranges it following a particular rule. The following is the illustration of the input and the steps of arrangement:**

**Input:** Put pocket hand watch he for them.

**Step I:** Put for he watch hand pocket them.

**Step II:** Put he for watch pocket hand them.

**Step III:** Put hand pocket watch for he them.

**Step IV:** Put pocket hand watch he for them.

And so on goes the machine. Study the logic and answer the questions that follow:

23. If Step III of a given input be 'fly sky birds my su fur say', what is the seventh step of the input?  
 1) fly sky birds my su fur say  
 2) fly birds sky my fur su say  
 3) fly fur su my birds sky say  
 4) fly su fur my sky birds say
24. If Step VII of an input is 'slow ran dhurwa pat hak dig vi', what is step V of that input?  
 1) slow dig hak pat dhurwa ran vi  
 2) slow hak dig pat ran dhurwa vi  
 3) slow dhurwa ran pat dig hak vi  
 4) slow ran dhurwa pat hak dig vi
25. Given the following:

Input: Ana dhir raj ran san rah ajji

What step will be the following arrangement?

**Arrangement:** Ana san rah ran dhir raj ajji

1) IV      2) V      3) VI      4) VIII

**Directions (Q. 26-30): Read the information given below and answer the questions that follow:**

- (i) There is a group of seven persons A, B, C, D, E, F and G.  
 (ii) There are four males, three females, two

married couples and three unmarried persons in the group.

- (iii) The seven persons are seated in a row on the bench.  
 (iv) Their professions are: engineer, teacher, doctor, psychologist, businessperson, architect and student.  
 (v) B is not married and another person, the psychologist, is the most intelligent.  
 (vi) The engineer is married to the teacher, who is the least intelligent of the group.  
 (vii) D is an architect. He is sitting on the leftmost corner.  
 (viii) The student is sitting on the rightmost corner of the bench.  
 (ix) The doctor is married to C. C is the second most intelligent of the group followed by her husband.  
 (x) The least intelligent of the group is sitting on the immediate right of D, followed by the most intelligent.  
 (xi) There are as many more intelligent persons than the engineer as there are less intelligent.  
 (xii) On the bench, followed by D there are three females sitting in succession.  
 (xiii) The psychologist is a female.  
 (xiv) The student is more intelligent than the architect, who is more intelligent than only one person, F.  
 (xv) Neither A nor G is a female.
26. Who is sitting on the immediate right of D?  
 1) F                                2) E  
 3) C                                4) Can't say
27. Which two are sitting together?  
 1) D and E  
 2) E and A  
 3) Teacher and businessman  
 4) Engineer and doctor
28. The engineer is not more intelligent than  
 1) student                        2) architect  
 3) teacher                        4) businessman
29. Which of these **cannot** be a married couple?  
 1) A-F                              2) A-C  
 3) G-F                              4) None of these
30. Which of these represents the correct order of intelligence (in the decreasing sequence)?  
 1) EBF                              2) CDF  
 3) ECB                              4) None of these

**Directions (Q. 31-33): Complete the series.**

31. AZ, GT, MN, ?, YB  
 1) KF                                2) RX  
 3) SH                                4) TS
32. J2Z, K4X, I7V, ?, H16R, M22P  
 1) I11T                              2) L11S  
 3) L12T                              4) L11T
33. gfe\_ig\_eii\_fei\_gf\_ii  
 1) eifgi                              2) figie  
 3) ifgie                              4) ifgie



34. If ACELDNRA stands for CALENDAR, what does LEGIBIEL stand for?  
 1) LIEGIBLE 2) ELIGIBLE  
 3) BIGEELIC 4) None of these
35. If 18514 stands for AHEAD, what does 31385 stand for?  
 1) CATCH 2) C ASSET  
 3) CONQUER 4) CACHE

**Directions (Q. 36-41): Attempt these questions independent of each other.**

36. X told Y, "Though I am the son of your father, you are not my brother." How is X related to Y?  
 1) Sister 2) Son  
 3) Daughter 4) None of these
37. Standing on a rock, Ravi said that Madurai was more than 3 kilometres but less than 8 kilometres from there. Prabhu said that it was more than 6 but less than 10 kilometres from there. If both of them are correct, how far is Madurai from the rock?  
 1) 8 km 2) 6 km  
 3) 7 km 4) Cannot be determined
38. Three of the following four are alike in a certain way and so form a group. Which one does not belong to that group?  
 1) - 2) + 3) % 4) =
39. In a row of children, Bhushan is seventh from the left and Motilal is fourth from the right. When Bhushan and Motilal exchange positions, Bhushan will be fifteenth from the left. Which will be Motilal's position from the right?  
 1) Eighth 2) Fourth  
 3) Eleventh 4) Twelfth
40. A clock gaining 2 minutes every hour was synchronised at midnight with a clock losing 1 minute every hour. How many minutes apart will its minute hand be at eleven the following morning?  
 1) 23 2) 27  
 3) 22 4) None of these
41. Keshav knows that Sudha's marks is more than 3 but less than 8 in a unit test. Sonia knows that it is more than 6 but less than 10. If both of them are correct, which of the following statements about Sudha's marks is definitely true?  
 1) It has only one value.  
 2) It has any of three values.  
 3) It has either of two values.  
 4) It has any of four values.

**Directions (Q. 42-57): Read the passages given below and answer the questions that follow each passage.**

#### Passage I

I hope my reader will be convinced, at his very entrance of this work, that he will find in the whole course of it nothing prejudicial to the cause of religion and virtue, nothing inconsistent with the strictest rules of decency, nor which can offend even the chastest eye in the perusal. On the contrary, I de-

clare that to recommend goodness and innocence hath been my sincere endeavour in this history. This honest purpose you have been pleased to think I have attained: and to say the truth, it is likeliest to be attained in books of this kind; for an example is a kind of picture, in which virtue becomes, as it were, an object of sight, and strikes us with that loveliness, which Plato assures there is in her naked charms.

Besides displaying that beauty of virtue which may attract the admiration of mankind, I have attempted to engage a stronger motive to human action in her favour, by convincing men, that their true interest directs them to a pursuit of her. For this purpose I have shown that no acquisitions of guilt can compensate the loss of that solid inward comfort of mind, which is the sure companion of innocence and virtue; nor can in the least balance the evil of horror and anxiety, which in their room, guilt introduces in our bosoms. And again, that as these acquisitions are in themselves generally worthless, so are the means to attain them not only base and infamous, but at best uncertain, and always full of danger. Lastly, I have endeavoured strongly to inculcate, that virtue and innocence can scarce ever be injured but by indiscretion; and that it is this alone which often betrays them into the snare that deceit and villainy spread for them. A moral which I have the more industriously laboured, as the teaching it is, of all others, the likeliest to be attended with success; since, I believe, it is much easier to make good men wise, than bad men good.

For these purposes, I have employed all the wit and humour of which I am master in the following history; wherein I have endeavoured to laugh mankind out of its favourite follies and vices. How far I have succeeded in this good attempt, I shall submit to the candid reader, with only two requests: first, that he will not expect to find perfection in this work; and secondly, that he will excuse some parts of it, if they fall short of that little merit which I hope may appear in others.

I will detain you, sir, no longer. Indeed I have run into a preface, while I professed to write a dedication. But how can it be otherwise? I dare not praise you; and the only means I know of to avoid it, when you are in my thoughts, are either to be entirely silent, or to turn my subjects to some other subject.

Pardon, therefore, what I have said in this epistle, not only without your consent, but absolutely against it; and give me leave, in this public manner, to declare that I am, with the highest respect and gratitude, Sir, Your most obliged, obedient, humble servant....

42. The tone used by the author in the beginning of the passage can best be described as  
 1) mellow 2) deferential  
 3) polite 4) courteous
43. How has the author tried to elicit a favourable

opinion of virtue from the readers?

- 1) By displaying virtue always wins
  - 2) By showing readers that a thing obtained by a way of virtue gives twice the joy compared to a thing obtained by a way of vice
  - 3) By substantiating his claim in proving to the readers that nothing got out of unfair means can compensate for the loss of inward peace
  - 4) All of the above
44. In the first paragraph, 'Her naked charms'—'her' here refers to
- 1) virtue
  - 2) picture
  - 3) object
  - 4) book
45. The author seeks forgiveness because
- 1) he has detained the reader
  - 2) he did not seek his patron's permission
  - 3) he went against the wishes of his patron
  - 4) he wrote a preface instead of a dedication
46. The preface written by the author is likely to be followed by
- 1) an essay on virtue and vice
  - 2) a play on virtue and vice
  - 3) a comedy that laughs at absurdities
  - 4) a fable that stresses the importance and frailties of virtue
47. An epistle as understood from the passage is likely to be
- 1) letter
  - 2) communicate
  - 3) tribute to a dead person
  - 4) closing section of a novel

#### Passage II

Studies of the factors governing reading development in young children have achieved a remarkable degree of consensus over the past two decades. The consensus concerns the causal role of 'phonological skills' in young children's reading progress. Children who have good phonological skills, or good 'phonological awareness' become good readers and good spellers. Children with poor phonological skills progress more poorly. In particular, those who have a specific phonological deficit are likely to be classified as dyslexic by the time they are 9 or 10 years old.

Phonological skills in young children can be measured at a number of different levels. The term phonological awareness is a global one, and refers to a deficit in recognising smaller units of sound within spoken words. Development work has shown that this deficit can be at the level of syllables, of onsets and rimes, or phonemes. For example, a 4-year old child might have difficulty in recognising that a word like *valentine* has three syllables, suggesting a lack of syllabic awareness. A five-year-old might have difficulty in recognising that the odd word out in the set of words *fan*, *cat*, *hat*, *mat* is *fan*. This task required an awareness of the sub-syllabic units of the onset and the rime. The onset corresponds to any initial consonants in a syllable and the rime corresponds to the vowel and to any following consonants. Rimes corre-

spond to rhyme in single-syllable words, and so the rime in *fan* differs from the rime in *cat*, *hat* and *mat*. In longer words, rime and rhyme may differ. The onsets in *valentine* are /v/ and /t/, and the rimes correspond to the spelling patterns 'al', 'en' and 'ine'.

A six-year-old might have difficulty in recognising that *plea* and *pray* begin with the same initial sound. This is a phonemic judgement. Although the initial phoneme /p/ is shared between the two words, in *plea* it is part of the onset 'pl' and in *pray* it is part of the onset 'pr'. Until children can segment the onset (or the rime), such phonemic judgements are difficult for them to make. In fact, a recent survey of different developmental studies has shown that the different levels of phonological awareness appear to emerge sequentially. The awareness of syllables, onsets, and rimes appears to merge at around the ages of 3 and 4, long before most children go to school. The awareness of phonemes, on the other hand, usually emerges at around the age of 5 or 6, when children have been taught to read for about a year. An awareness of onsets and rimes thus appears to be a precursor of reading, whereas an awareness of phonemes at every serial position in a word only appears to develop as reading is taught. The onset-rime and phonemic levels of phonological structure, however, are not distinct. Many onsets in English are single phonemes, and so are some rimes (e.g. *sea*, *go*, *zoo*).

The early availability of onsets and rimes is supported by studies that have compared the development of phonological awareness of onsets, rimes, and phonemes in the same subjects using the same phonological awareness tasks. For example, a study by Treiman and Zudowski used a same/different judgement task based on the beginning or the end sounds of words. In the beginning-sound task, the words either began with the same onset, as in *plea* and *plank*, or shared only the initial phoneme, as in *plea* and *pray*. In the end-sound task, the words either shared the entire rime, as in *spit* and *wit*, or shared only the final phoneme, as in *rat* and *wit*. Treiman and Zudowski showed that four- and five-year-old children found the onset-rime version of the same/different task significantly easier than the version based on phonemes. Only the six-year-olds, who had been learning to read for about a year, were able to perform both versions of the tasks with an equal level of success.

48. According to the passage which of the following statements is true?
- 1) A mono-syllabic word can have only one onset
  - 2) A mono-syllabic word can have only one rhyme but more than one rime
  - 3) A mono-syllabic word can have only one phoneme
  - 4) All of these
49. Which of the following is likely to emerge last in the cognitive development of a child?
- 1) Rhyme
  - 2) Rime





- 1) the introduction to a book
  - 2) the first chapter of a book
  - 3) the middle of a text book
  - 4) an article in a news weekly
56. The best title for this passage would be
- 1) 'Self-actualization'
  - 2) 'Self-reference in Human Motivation'
  - 3) 'The Reduction of Cognitive Dissonance'
  - 4) 'Cognitive Dissonance and the Self'
57. Which of the following statements would the author disagree with?
- 1) The tendency to be consistent is the only aspect of how self-perception influences motivation.
  - 2) The motivating effects of the need to correct incongruity have been the occasion for several theories.
  - 3) By self-actualization, Carl Jung meant the development of full individuality, with all parts somehow in harmony.
  - 4) None of the above
- Directions (Q. 58-61): Each sentence has two blanks, indicating that something has been omitted. Choose the set of words that best fits the meaning of the sentence as a whole.**
58. I am not attracted by the \_\_\_\_\_ life of the \_\_\_\_\_, always wandering through countryside, begging for charity.
- 1) proud, almsgiver
  - 2) affluent, mendicant
  - 3) peripatetic, vagabond
  - 4) natural, philanthropist
59. Though the country has \_\_\_\_\_ free medical service for the poor, it is \_\_\_\_\_.
- 1) stopped, unaffordable
  - 2) maintained, admirable
  - 3) favoured, appreciable
  - 4) instituted, inadequate
60. If criminals are \_\_\_\_\_ to join electoral fray, \_\_\_\_\_ is likely to increase.
- 1) allowed, extortion
  - 2) encouraged, harmony
  - 3) invited, voting
  - 4) compelled, brotherhood
61. They fought most \_\_\_\_\_ yet success \_\_\_\_\_ them.
- 1) courageously, dishonoured
  - 2) valiantly, eluded
  - 3) sincerely, failed
  - 4) bravely, favoured
62. National Income of India is compiled by
- 1) Finance Commission
  - 2) Indian Statistical Institute
  - 3) National Development Council
  - 4) Central Statistical Organisation
63. Which is the best measure of economic growth of a country?
- 1) GNP
  - 2) GDP
  - 3) Net revenue
  - 4) None of these
64. A crossed cheque is one which can be encashed only
- 1) by the drawee
  - 2) through a bank
  - 3) at the State Bank of India
  - 4) after it has been transferred to another person
65. Which of the following is the Banker of the Banks?
- 1) IDBI
  - 2) SBI
  - 3) RBI
  - 4) SBI and RBI
66. The period of the First Five Year Plan was from
- 1) 1950-51 to 1954-55
  - 2) 1951-52 to 1955-56
  - 3) 1952-53 to 1956-57
  - 4) None of these
67. Who was the first woman Prime Minister in the world?
- 1) Indira Gandhi
  - 2) Sirimavo Bandaranaike
  - 3) Margaret Thatcher
  - 4) Benazir Bhutto
68. Rajdhani Express trains run
- 1) only between New Delhi and all State capitals
  - 2) only between New Delhi and State capitals
  - 3) only between New Delhi and important cities
  - 4) only between New Delhi and Mumbai, Kolkata and Chennai
69. Where are the headquarters of Volkswagen Auto Company?
- 1) France
  - 2) Britain
  - 3) USA
  - 4) Germany
70. 'Maple leaf' is the symbol of which country?
- 1) Canada
  - 2) Australia
  - 3) Kenya
  - 4) Brazil
71. IRNSS is
- 1) Indian Regional Navigational Satellite System
  - 2) India's Rural Navigational Space System
  - 3) India's Regional Navigational Space System
  - 4) Indian Regional Navigational Space Satellite
72. India is planning to merge which among the following disease control programmes along with AIDS?
- 1) Polio
  - 2) TB
  - 3) Hepatitis
  - 4) None of these
73. Year 2007 would be observed as
- 1) India-Japan Tourism year
  - 2) India-Bhutan Tourism year
  - 3) India-China Tourism year
  - 4) India-Nepal Tourism year
74. Lots of western countries are these days attracted towards Asian countries and are entering into more and more business/trade agreements with them. Which of the following are the main factors for the same?
- A. Huge untapped market.
  - B. Availability of knowledge-based human capital.
  - C. Huge amount of capital parked idle.
  - D. Saturation of Western market.
- 1) Only A and B
  - 2) Only B and C
  - 3) A, B and C only
  - 4) A, B and D only
75. Which of the following is an organisation of Software and Service Companies?



- 1) NASDAQ                      2) NCSA  
3) NASCOM                    4) NCAER
76. Which of the following was/were **not** one of the highlights of the Union Budget 2006-07?  
A. No separate allotment for North-East regions. All funds clubbed together with Bharat Nirman Scheme.  
B. Service Tax net widened as more and more services are covered under it.  
C. Fiscal deficit estimated at around 4% of the GDP.
- 1) Only A                      2) Only B  
3) Only C                      4) Both A and B
77. Which of the following sectors is now open for Foreign Direct Investment for the first time with 51 percent FDI allowed in it?  
1) Nuclear Power Generation  
2) Airports and Civil Aviation  
3) Automobile  
4) Retail Sector
78. The XXI Winter Olympics will be held in 2010 at  
1) Tokyo                      2) Minsk  
3) Rome                      4) Vancouver
79. As per the guidelines issued by the SEBI, the Permanent Account Number (PAN) is a must for which of the following?  
1) Demat Accounts  
2) All Savings Bank Accounts  
3) All Housing Loan Accounts  
4) All Current Accounts
80. Which of the following banks has been taken over by the Standard Chartered Bank?  
1) Bank of Bahrain and Kuwait  
2) Development Bank of Singapore  
3) Deutsche Bank  
4) Federal Bank of Germany
81. Which of the following trophies is associated with the game of Football?  
1) Evert Cup                      2) Merdeka Cup  
3) Mumbai Gold Cup                      4) Bharat Ram Cup

**Directions (Q. 82-85): Each question is followed by three statements. You have to study the question and all the three statements given and decide whether any information provided in the statement(s) is redundant and can be dispensed with while answering the questions.**

82. A 25-m-long wire is cut into 3 pieces. How long is the longest piece?  
A. Two pieces are each 1 m shorter than the longest piece.  
B. Two pieces of the wire are of the same length.  
C. The longest piece of the wire is 12.5% more than the smallest piece.

- 1) Only A  
2) Either A alone or B and C together  
3) Only B and C together  
4) B and either A or C
83. Is the average of the largest and the smallest of four given numbers greater than the average of the four numbers?  
A. The difference between the largest and the second largest number is less than the difference between the second largest and the second smallest number.  
B. The difference between the largest and the second largest numbers is greater than the difference between the second smallest and the smallest numbers.  
C. The difference between the largest and the second smallest numbers is greater than the difference between the second largest and the smallest number.
- 1) Only A                      2) Either B or C  
3) A and either B or C                      4) Any two of them
84. Rajdhani Express leaves Delhi at 4 P.M. for Mumbai. At what time will it reach Mumbai?  
A. It maintains the average speed of 110 km per hr.  
B. It has four stoppages of 10 minutes each between Delhi and Mumbai.  
C. It covers 250 km before each stoppage.
- 1) Only B  
2) Any two of the three  
3) Any one of the three  
4) None of these
85. Find the area of an isosceles triangle.  
A. Perimeter of the triangle is 64 cm.  
B. Base of the triangle is 16 cm.  
C. Height of the triangle is  $16\sqrt{2}$  cm.
- 1) Any of them                      2) Any two of them  
3) Either B or C only                      4) Only A

**Directions (Q. 86-90): Answer the questions on the basis of the information given below.**

A rating company rates the performance of three energy biscuits company. The points are allotted according to their sale. The Point Index (PI) of each of the companies = The number of lakh units sold during the month  $\times$  points allotted.

**Table - I**

The number of lakh units sold = x	Points allotted
$x \leq 5$	3
$5 < x \leq 8$	4
$8 < x \leq 11$	5
$x > 11$	6

The following table shows the number of lakh units sold of each of the brands Moonfeast, Warle G and Enivita from Jan 06 to June 06.

Table - II

Name of month	Moonfeast	Warle G	Enivita	Rank of months according to PI
Jan 06	7	4	—	4
Feb 06	—	13	—	1
Mar 06	—	—	—	5
April 06	—	—	—	6
May 06	—	—	—	2
June 06	—	—	10	3

**Note:**

- (1) The number of lakh units sold by all the three companies in each of the months is identical.
  - (2) The sum of the number of lakh units sold by each of the companies in all the six months together is identical.
  - (3) The number of lakh units sold by any of the companies in any one of the months is at least 1.
  - (4) The number of lakh units sold by exactly two companies in each of the months Feb 06, March 06 and April 06 is identical.
  - (5) The Point Index of Jan 06 and May 06 is 26 and 17 less respectively than Feb 06. Also, the PI in Jan 06 is one more than March 06.
  - (6) The number of lakh units sold by Moonfeast in March 06 and April 06 together is equal to that in May 06.
  - (7) The sum of PI in any month is not greater than 100.
  - (8) The least possible Point Index (PI) is in April 06 for the sum of lakh units sold by all three companies.
86. Find the number of lakh units sold by Enivita in March 06.
    - 1) 5
    - 2) 6
    - 3) 4
    - 4) 7
  87. Find the PI of all three companies in April 06.
    - 1) 59
    - 2) 60
    - 3) 61
    - 4) 58
  88. Find the number of lakh units sold by Moonfeast in all the six months together.
    - 1) 34
    - 2) 32
    - 3) 36
    - 4) 38
  89. Find the number of lakh units sold by Enivita in May 06.
    - 1) 7
    - 2) 4
    - 3) 5
    - 4) 8
  90. Find the PI of Warle G in all the six months together.
    - 1) 139
    - 2) 153
    - 3) 138
    - 4) 147

**Directions (Q. 91-94): Answer the questions based on the information given.**

The rate of taxation has the following slabs in India.

Taxable Income (Rs)	Tax Rate
0 - 50,000	Exempt
50,000 - 60,000	10%
60,000 - 1,50,000	20%
1,50,000 +	30%

For salaried employees having salaries below Rs 1,50,000 p.a., a standard deduction of Rs 30,000 is available to salaried employees, which is reduced from the total income. Besides, a rebate is available on investments in various saving schemes like Provident Fund, Infrastructure Bonds, Post Office Savings, etc. The rebate is calculated at 20% of the total investment in these savings instruments. Thus, if a person has invested Rs 10,000 in some saving instruments, he gets Rs 2,000 rebate on his net tax liability.

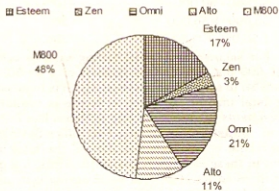
However, if the salary increases above Rs 1,50,000 p.a., the standard deduction is reduced to Rs 25,000 and the rebate on investments is calculated at the rate of 15% of the total investment. Thus, a person saving Rs 20,000 will get a rebate of Rs 3,000 on his liability. Besides, a tax surcharge of 10% is added on the total tax liability for all tax payers. Also, working women have a further rebate of Rs 5,000 available to them on their total tax liability.

91. What will be the total tax liability of Mr Rajiv Srivastava, who has a salary of Rs 1,50,000 p.a. (Assume he saved Rs 40,000 in the year)?
  - 1) Rs 5,000
  - 2) Rs 5,500
  - 3) Rs 1,000
  - 4) Data insufficient
92. For the question above, if Mr Srivastava's salary increases by Rs 5,000 pa, what will be the change in his net income after tax (Assuming that he again saves Rs 40,000 in the year)?
  - 1) Increase of Rs 1,000
  - 2) Decrease of Rs 800
  - 3) Increase of Rs 600
  - 4) Increase of Rs 5,000
93. Mrs Shruti Srivastava who works in the same firm, earns a salary of Rs 1,50,000 p.a. How much must she save to pay no tax for the year?
  - 1) Rs 41,000
  - 2) Rs 40,000
  - 3) Rs 30,000
  - 4) Rs 60,000
94. Prakash Puri has a salary income of Rs 1,44,000. Besides he has earned Rs 35,000 as consultancy income. He has saved Rs 70,000 for the year in tax savings instruments. How much tax will he have to pay?
  - 1) Rs 18,800
  - 2) Rs 14,800
  - 3) Rs 4,800
  - 4) None of these

**Directions (Q. 95-99): The pie-charts below show us the break-up of the Total Revenue and Total Sales Volume for a company, for the year ended 2003.**

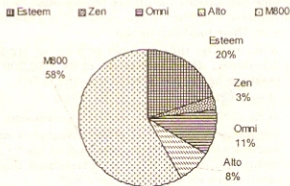
Total Revenue = Rs. 11,39,200 million and Total Sales Volume = 653610 Units. Based on the data provided in both the figures answer the questions that follow.

Total Revenue



Break-up of Total Revenue

Total Sales Volume



Break-up of Total Sales

95. What is the net revenue per Esteem sold, approximately?

- 1) Rs 14,81,000      2) Rs 13,48,000  
3) Rs 15,32,000      4) Rs 13,26,000

96. The highest net revenue per vehicle comes from

- 1) M800      2) Omni  
3) Esteem      4) Zen

97. If volume of sales of Omni was increased by 25% and this sales increase was entirely at the cost of M800, then what is the percentage decrease in M800 volume sales?

- 1) 1.3%      2) 2.4%  
3) 4.3%      4) 4.75%

98. If the net revenue from Alto was to be excluded, what per cent of the revenue would Zen form?

- 1) 3.27%      2) 3.17%

- 3) 3.37%      4) 3.47%

99. Which of the following is/are true?

- (i) The sum of the revenue generated by Zen and Omni is lesser than twice that by Alto.  
(ii) If the revenues of Esteem and Alto be interchanged, Alto's revenue per unit would be more than that of Zen.  
(iii) The revenue per unit of Esteem is greater than that of M800.

- 1) (i) only      2) (ii) only  
3) (iii) only      4) Both (ii) and (iii)

100. Four boys and three girls stand in a queue for an interview. The probability that they will stand in alternate positions is

- 1)  $1/34$       2)  $1/35$   
3)  $1/17$       4)  $1/68$

101. A tower is 61.25 metres high. A rigid body is dropped from its top and at the same instant another body is thrown upwards from the bottom of the tower with such a velocity that they meet in the middle of the tower. The velocity of projection of the second body is

- 1) 20 m/s      2) 25 m/s  
3) 24.5 m/s      4) None of these

102. A man carries a hammer on his shoulder and holds it at the other end of its light handle in his hand. If he changes the point of support of the handle at the shoulder and if  $x$  is the distance between his hand and the point of support, then the pressure on his shoulder is proportional to

- 1)  $x$       2)  $x^2$   
3)  $1/x$       4)  $1/x^2$

103. Two trains are 2 km apart and their lengths are 200 m and 300 m. They are approaching towards each other with a speed of 20 m/s and 30 m/s respectively. After how much time will they cross each other?

- 1) 50 seconds      2) 100 seconds  
3) 25/3 seconds      4) 150 seconds

104. A and B play a game where each is asked to select a number from 1 to 25. If the two numbers match, both of them win a prize. The probability that they will not win a prize in a single trial is

- 1)  $1/25$       2)  $24/25$   
3)  $2/25$       4) None of these

105. Four different integers form an increasing AP. If one of these numbers is equal to the sum of the squares of the other three numbers, then the numbers are

- 1) -2, -1, 0, 1      2) 0, 1, 2, 3  
3) -1, 0, 1, 2      4) None of these

106. A man arranges to pay off a debt of Rs 3,600 in 40 annual instalments which are in AP. When 30 of the instalments are paid, he dies, leaving one-third of the debt unpaid. The value of the 8th instalment is

- 1) Rs 35      2) Rs 50



- 3) Rs 65                      4) None of these
107. A family consists of a grandfather, 5 sons and daughters and 8 grandchildren. They are to be seated in a row for dinner. The grandchildren wish to occupy the 4 seats at each end and the grandfather refuses to have a grandchild on either side of him. The number of ways in which the family can be made to sit is
- 1) 11360                      2) 11520  
3) 21530                      4) None of these
108. A father with 8 children takes 3 children at a time to the zoological garden, as often as he can without taking the same 3 children together more than once. Then the
- 1) number of times he will go is 56.  
2) number of times each child will go is 21.  
3) number of times a particular child will not go is 35.  
4) All of these
109. Consider the following statements:  
A. Mode can be computed from histogram.  
B. Median is not independent of change of scale.  
C. Variance is independent of change of origin and scale.  
Which of these is/are correct?
- 1) Only A and B                      2) Only B  
3) Only A                      4) A, B and C
110. A uniform one-metre-long rod AB of 17 kg weight is suspended horizontally from fixed supports by two vertical strings attached to points C and D on the rod at distances of 12 cm and 16 cm from A and B respectively. The strings at C and D can support weights of 10 kg and 9 kg respectively without breaking. Then the position where a weight of 2 kg can be attached to the rod without breaking either of the strings is
- 1) 10 cm from A                      2) 12 cm from A  
3) 13 cm from A                      4) None of these
111. A car travels first half distance between two places with a speed of 40 km/hr and the rest half distance with a speed of 60 km/hr. The average speed of the car is
- 1) 48 km/hr                      2) 37 km/hr  
3) 44 km/hr                      4) None of these
112. A juggler keeps three balls going with one hand, so that at any instant, two are in the air and one in hand. If each ball rises to a height of  $x$  metres, then each ball stays in the hand for
- 1)  $0.45 \sqrt{x}$  seconds                      2)  $0.33 \sqrt{x}$  seconds  
3)  $0.24 \sqrt{x}$  seconds                      4) None of these
113. A jet plane is rising vertically with a velocity of 10 m/s. It has reached a certain height when the pilot drops a coin, which takes 4 seconds to hit the ground. Assuming that there is no resistance to the motion of the coin, the height of the plane and the velocity of the coin on impact with the ground are
- 1) 38.4 m, 29.2 m/sec                      2) 38.4 m, 28.7 m/sec  
3) 26.5 m, 13.5 m/sec                      4) None of these
114. In a company there are 75% skilled workers and remaining are unskilled. 80% of skilled workers and 20% of unskilled workers are permanent. If the number of temporary workers is 126, then what is the number of total workers?
- 1) 480                      2) 510  
3) 360                      4) 377
115. A shopkeeper sells an article at  $12\frac{1}{2}\%$  loss. If he sells it for Rs 92.50 more then he gains 6%. What is the cost price of the article?
- 1) Rs 510                      2) Rs 500  
3) Rs 575                      4) Rs 600
116. Two taps can fill a tank in 15 and 12 minutes respectively. A third tap can empty it in 20 minutes. If all the taps are opened at the same time then in how much time will the tank be filled?
- 1)  $8\frac{1}{2}$  minutes                      2) 10 minutes  
3) 11 minutes                      4) 14 minutes
117. 4 men and 10 women were put on a work. They completed  $\frac{1}{3}$  of the work in 4 days. After this 2 men and 2 women were increased. They completed  $\frac{2}{9}$  more of the work in 2 days. If the remaining work is to be completed in 3 days, then how many more women must be employed?
- 1) 32                      2) 8  
3) 50                      4) 55
118. In three vessels, the ratios of water to milk are 6 : 7, 5 : 9 and 8 : 7 respectively. If the mixtures of the three vessels are mixed then what is the ratio of water and milk?
- 1) 2431 : 3781                      2) 3691 : 4499  
3) 4381 : 5469                      4) None of these
119. A train starts from Delhi at 6.00 AM and reaches Meerut at 10 AM. The other train starts from Meerut at 8 AM and reaches Delhi at 11 : 30 AM. If the distance between Delhi and Meerut is 200 km, then at what time did the two trains meet each other?
- 1) 8 : 56 AM                      2) 8 : 46 AM  
3) 7 : 56 AM                      4) 8 : 30 AM
120. The terms "bull" and "bear" are used in the
- 1) Bihar Government's Animal Husbandry Department  
2) Income Tax Department  
3) CBI  
4) Stock Exchange
121. Bhakra Dam is built across the river
- 1) Sutlej                      2) Ravi  
3) Jhelum                      4) Chenab
122. Tetanus is a disease caused by
- 1) Fungus                      2) Virus  
3) Bacteria                      4) Insects
123. Light Year is a unit of



- 1) intensity of light      2) distance  
3) time      4) planetary motion
124. A tax that takes away a higher proportion of one's income as the income rises is termed as  
1) Progressive tax      2) Proportional tax  
3) Regressive tax      4) Indirect tax
125. The famous International Company 'De Beers' is engaged in the business of  
1) Lager beer      2) Animal skins  
3) Shares and stocks      4) Diamonds
126. Commercial vehicles are not produced by which of the following companies in India?  
1) TELCO      2) Ashok Leyland  
3) DCM Daewoo      4) Birla Yamaha
127. Who among the following has written the book, *Wings of Fire : An Autobiography*?  
1) Dr APJ Abdul Kalam      2) Shobha De  
3) Atal Behari Vajpayee      4) KR Narayanan
128. Which of the following is not in courier business?  
1) First Flight      2) DHL  
3) Essar      4) FedEx
129. Match List I with List II and select the correct answer using the codes given below the lists.
- |                        |                           |
|------------------------|---------------------------|
| <b>List I (Cities)</b> | <b>List II (Airports)</b> |
| A. Tokyo               | 1. Schiphol               |
| B. Paris               | 2. Narita                 |
| C. Washington          | 3. Orly                   |
| D. Amsterdam           | 4. Dulles                 |
- |      |   |   |   |
|------|---|---|---|
| A    | B | C | D |
| 1) 3 | 2 | 4 | 1 |
| 2) 2 | 3 | 4 | 1 |
| 3) 3 | 2 | 1 | 4 |
| 4) 2 | 3 | 1 | 4 |
130. What is the chronological sequence of the following events in Indian Science scene?  
A. Launching of Rohini-1 satellite  
B. Pokhran nuclear test  
C. Start of Indian Space Research Organisation  
D. First unit of Kalpakkam nuclear power station went critical  
Choose the correct answer from the codes given below.  
1) A, B, D, C      2) B, C, D, A  
3) C, B, A, D      4) D, A, C, B
131. The correct chronological order in which  
A. VP Singh      B. Chandra Shekhar  
C. Morarji Desai      D. Charan Singh  
Occupied the office of the Prime Minister of India is  
1) C, D, B, A      2) D, C, B, A  
3) C, D, A, B      4) D, C, A, B
132. Panchayat Raj was first introduced in India in October 1959 in  
1) Rajasthan      2) Tamil Nadu  
3) Kerala      4) Karnataka
133. Which of the following statements are true about the India-born woman astronaut Kalpana Chawla?  
A. She was born in Karnal.  
B. She flew on board the shuttle flight STS-87.  
C. She was trained at the Kennedy Space Centre.  
D. She did a space-walk to retrieve the Spartan Satellite.  
Select the correct answer using the codes given below.  
1) A and B      2) B and C  
3) A, B and C      4) A, B and D
134. Which of the following pairs is **incorrect**?  
1) Pasteur : Bacteriology  
2) Newton : Law of Gravitation  
3) Roentgen: X-rays  
4) Faraday : Diffusion of gases
135. Match the following:
- |                   |  |
|-------------------|--|
| A. Frequency      | 1. Oscillation in unit time  |
| B. Amplitude      | 2. A device consisting of a weight swinging on the end of a string |
| C. Pendulum       | 3. Chemical elements in order of their atomic numbers              |
| D. Periodic table | 4. Maximum departure from an equilibrium value                     |
- |      |   |   |   |
|------|---|---|---|
| A    | B | C | D |
| 1) 2 | 1 | 3 | 4 |
| 2) 1 | 2 | 4 | 3 |
| 3) 1 | 4 | 2 | 3 |
| 4) 4 | 3 | 1 | 2 |
136. Which one of the following Fundamental Rights is also available to a foreigner on the soil of India?  
1) Equality of opportunity in the matter of public employment  
2) Freedoms of movement, residence and profession  
3) Protection from discrimination on grounds only of religion, race, caste or sex  
4) Protection of life and personal liberty against action without authority of law
137. In case of which of the following, the method of removal from office is the same?  
I. A Judge of the Supreme Court  
II. Chief Election Commissioner  
III. President of India  
1) I and II      2) II and III  
3) I and III      4) I, II and III
138. Match the following:
- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| A. Chief Election Commissioner    | 1. Elected by Rajya Sabha         |
| B. Deputy Chairman of Rajya Sabha | 2. Elected by Lok Sabha           |
| C. Chairman of the PAC            | 3. Appointed by Lok Sabha Speaker |
|                                   | 4. Appointed by the President     |
- |      |   |   |
|------|---|---|
| A    | B | C |
| 1) 4 | 1 | 3 |
| 2) 2 | 3 | 4 |
| 3) 1 | 4 | 2 |
| 4) 4 | 1 | 2 |

139. All India Services can be created by the

- 1) President
- 2) UPSC
- 3) Prime Minister
- 4) Parliament

**Directions (Q. 140-144):** Each question given below is followed by two arguments numbered I and II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument. Give answer as

- 1) if only argument I is strong
- 2) if only argument II is strong
- 3) if either I or II is strong
- 4) if neither I nor II is strong

140. **Statement:** Should non-vegetarian food be totally banned in our country?

**Arguments:**

- I. Yes. It is expensive and therefore beyond the means of most people in our country.
- II. No. Nothing should be banned in a democratic country.

141. **Statement:** Should India go in for computerisation in industry?

**Arguments:**

- I. No. Computerisation demands a lot of money. We should not waste money on it.
- II. Yes. When advanced countries are introducing computers in various areas, how can we afford to lag behind?

142. **Statement:** Should personal tax be abolished in India?

**Arguments:**

- I. Yes. It will motivate people to earn more.
- II. No. Individuals must learn to share their wealth with other people.

143. **Statement:** Should high chimneys be installed in industries?

**Arguments:**

- I. Yes. It reduces pollution at ground level.
- II. No. It increases pollution in upper atmosphere.

144. **Statement:** Should judiciary be independent of the executive?

**Arguments:**

- I. Yes. This would help curb the unlawful activities of the executive.
- II. No. The executive would not be able to take bold measures.

**Directions (Q. 145-148):** In each question below there is an inference, which is based on the given passage. Examine each inference separately in the context of the passage and decide upon its degree of truth or falsity. Mark answer as

- 1) if you think the inference is 'definitely true'
- 2) if you think the inference is 'probably true' though not definitely true in the light of the facts given
- 3) if you think the 'data are inadequate', ie from the facts given you cannot say whether the inference is likely to be true or false
- 4) if you think the inference is 'definitely false'

## PASSAGE

The reforms are aimed at having an impact over a wide cross-section of the economy. With improvements and greater efficiency in mobilising and allocating resources, the basis will become stronger for promoting economic growth and development. The reforms aim at increasing efficiency of the financial sector and the range of financial services available within the economy. The introduction of bank capital adequacy and accounting standards, together with improvement in the regulation and supervision of financial institutions and capital market, is aimed at installing greater public confidence, ensuring safety and soundness of the financial system, bringing about greater transparency and accountability in operations, and encouraging overall increased resources mobilisation within the economy.

145. Prior to reforms, the banking sector was running inefficiently although resource allocation was efficient.

146. Bank capital adequacy was not in operation before reforms.

147. Public confidence has some connection with resource mobilisation.

148. The economic reforms have aimed only at the financial sector.

**Directions (Q. 149-155):** Answer these questions independent of each other based on the information given.

149. In order to boost sales of toys at times other than the peak sale time — Christmas — manufacturers use many techniques. Character toys from movies or TV series are promoted, and all sets are 'collectible' by their young purchasers. Collections, however, never appear to be complete, because as soon as all the characters are acquired, the child then requires the 'car', the 'phone', the 'mobile home', and even the 'airplane' to ensure a happy environment for the toys. Ultimately, the elusive final piece of the series is attained just as the manufacturer and promoter release the next series of 'collectibles'. The prime aim of the manufacturer and promoter is to ensure that

- 1) all children should be happy and no child can be happy without a complete series of toys.
  - 2) as soon as one set is complete or almost complete, then the next one arrives on the scene.
  - 3) children should be encouraged to complete their collections of toys.
  - 4) sales need to be bolstered throughout the year.
150. Pioneers of the motor-car industry realised that if they were going to meet the growing demand for their product, they had to adapt the labour force used in the productive process. Instead of many men working to complete all the stages of one car at a time, they assigned defined tasks to each man which they would repeat on every car.

Which of the following can be concluded from the passage?

- 1) Early motor-car manufacturers intended to increase productivity by applying the principle of division of labour.
- 2) The car workers became disgruntled because they were assigned monotonous, repetitive tasks on the assembly line.
- 3) Economies of scale enabled early motor companies to expand.
- 4) A bad worker would perform the same task badly on each car leading to many more rejects.

151. There are three main factors that control the risks of becoming dependent on drugs. These factors are the type of drug, the personality of the individual, and the circumstances in which the drug is taken. Indeed, it could be said that the majority of the adult population have taken alcohol, yet few have become dependent on it. Also, many strong drugs that have been used for medical purposes have not caused the patient to become addicted.

However, it can be demonstrated that people who have taken drugs for fun are more likely to become dependent on the drug. The dependence is not always physiological but may remain psychological, although the effects are still essentially the same. Those at greatest risk appear to be personalities that are psychopathic, immature, or otherwise unstable.

Psychological dependence is very strong with heroin, morphine, cocaine, and amphetamines. Physiological dependence is great with heroin and morphine, but less with amphetamines, barbiturates, and alcohol.

Which of the following conclusions can be drawn from the text?

- 1) One cannot become addicted to certain drugs if one has a strong personality.
- 2) Taking drugs for "kicks" increases the possibility of becoming dependent on drugs.
- 3) Psychological dependence is the greatest with heroin.
- 4) Alcohol is a safe drug since very few people become dependent on it.

152. Every town with a pool hall has its share of unsavoury characters. This is because the pool hall attracts gamblers and all gamblers are unsavoury.

Which of the following, if true, cannot be inferred from the above?

- 1) All gamblers are unsavoury.
- 2) All pool halls attract gamblers.
- 3) Every town has unsavoury characters.
- 4) All gamblers are attracted by pool halls.

153. The use of petroleum products in the manufacture of plastics should be regulated and limited by law. Our country's need for petroleum for en-

ergy production is more vital than our need for plastics, and our growing dependence on foreign sources of petroleum could have serious consequences if, for example, a war cut off our access to those imports. By reducing our use of petroleum products in making plastics, we can take a major step towards national energy independence and so enhance our country's security.

Which of the following, if true, would most greatly weaken the argument above?

- 1) Only a small fraction of petroleum products consumed in this country is used in making plastics.
  - 2) New methods of plastics manufacture can somewhat reduce the amount of petroleum needed.
  - 3) The development of atomic energy as an alternative to petroleum-based energy has been slowed by legitimate concerns over safety.
  - 4) In times of war, combatant nations would be seriously tempted to seize forcibly the territories of petroleum-producing nations.
154. For our nation to compete successfully in the high-technology enterprises of the future, workers with skills in maths and science will be needed. But it is doubtful that they will be available, since there is a shortage of high school maths and science teachers that shows no signs of improving. Industry can help alleviate this problem by funding scholarship grants and aid to college students who graduate in maths and science with the hope of pursuing teaching careers.
- Which of the following, if true, would most probably prevent the proposed plan from achieving its intended effect?
- 1) After graduation from college, most maths and science graduates opt for jobs in industry rather than in teaching.
  - 2) Many high schools have been forced to lower their standards in hiring maths and science teachers.
  - 3) More scholarship money is already available for students of maths and science than is available for those in any other field.
  - 4) Population statistics shows that the number of high school students is expected to decline over the next ten years.

155. Seen from the perspective of potential, India is truly one of the most exciting places on earth. In the 16 years since Microsoft set up operations in India, I've seen first hand the incredible strides the country has made, building an information technology almost from scratch. This industry is an engine that has driven the creation of new opportunities for hundreds of thousands of people and established India as one of the world's most important centres for innovation. Thanks to the combination of rapid economic growth, an emerging middle class, and an impressive record of tech-



nical excellence, India stands as one of the great success stories of our time.

The essence of the above text is

- 1) India is an exciting place and the excitement has been palpable ever since Microsoft set up shop here.
- 2) Thanks to the prolific growth of the information technology industry, India has of late found its place on the global map.
- 3) It is technology, employment and innovation that have contributed to the emergence of a highly successful India over the past decade and a half.
- 4) India's success lies in its rapid unleashing of potential, whether it be in the economy, technology or the power to innovate.

**Directions (Q. 156-160): In each question below, there are two or three statements followed by four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follow(s) from the given statements.**

156. **Statements:** a. Some singers are rockers.  
b. All rockers are westerners.
- Conclusions:** I. Some rockers are singers.  
II. Some westerners are rockers.  
III. Some singers are westerners.  
IV. Some singers are not westerners.

- 1) I, II and III follow
- 2) I, II and IV follow
- 3) II, III and IV follow
- 4) I, III and IV follow

157. **Statements:** a. No Indian is an Asian.  
b. Some Americans are Indians.
- Conclusions:** I. Some Indians are not Asians.  
II. Some Asians are not Americans.  
III. Some Americans are not Asians.  
IV. All Americans are Asians.

- 1) Either III or IV follows
- 2) Either I or II follows
- 3) I and III follow
- 4) Either II or III follows

158. **Statements:** a. Some charts are darts.  
b. All darts are carts.  
c. Some carts are smarts.
- Conclusions:** I. Some charts are carts.  
II. Some carts are darts.  
III. Some darts are smarts.  
IV. Some smarts are charts.

- 1) Only I and III follow
- 2) Only II and III follow
- 3) Only I and II follow
- 4) I, III and IV follow

159. **Statements:** a. Some big are small.  
b. No small is large.  
c. Some large are tiny.
- Conclusions:** I. Some large are not big.  
II. No big is large.  
III. Some small are not tiny.

IV. Some big are not tiny.

- 1) Only I follows
- 2) Only II follows
- 3) Only III follows
- 4) None follows

160. **Statements:** a. No killer is a sweater.  
b. No jacket is a sweater.  
c. Some jackets are roses.
- Conclusions:** I. Some roses are sweaters.  
II. Some roses are not sweaters.  
III. No killer is a jacket.  
IV. Some jackets are killers.

- 1) Either I or II and either III or IV follow
- 2) Either III or IV and II follow
- 3) Either II or III follows
- 4) Either I or II and either III or IV follow

161. There were two candidates in an election. 10% of the voters did not vote. 60 votes were declared invalid. The elected candidate got 308 votes more than his opponent. If the elected candidate got 47% of the total votes, how many votes did each candidate get?

- 1) 2316 and 2012
- 2) 2629 and 2324
- 3) 2871 and 2575
- 4) 2914 and 2606

162. Railway fares of 1st, 2nd and 3rd classes between two stations were in the ratio of 8 : 6 : 3. The fares of 1st and 2nd class were subsequently reduced by  $\frac{1}{6}$  and  $\frac{1}{12}$  respectively. If during a year the ratio between the passengers of 1st, 2nd and 3rd classes was 9 : 12 : 26 and total amount collected by the sale of tickets was Rs 1088, then find the collection from the passengers of 1st class.

- 1) Rs 260
- 2) Rs 280
- 3) Rs 300
- 4) Rs 320

163. A ship, 40 kilometres from the shore, springs a

leak which admits  $3\frac{3}{4}$  tonnes of water in 12 minutes. 60 tonnes would suffice to sink her, but the ship's pumps can throw out 12 tonnes of water in one hour. Find the average rate of sailing, so that she may reach the shore just as she begins to sink.

- 1)  $1\frac{1}{2}$  km per hour
- 2)  $2\frac{1}{2}$  km per hour

- 3)  $3\frac{1}{2}$  km per hour
- 4)  $4\frac{1}{2}$  km per hour

164. Divide Rs 1,586 in three parts in such a way that their amounts at the end of 2, 3, and 4 years respectively at 5% per annum simple interest be equal.

- 1) 276 : 264 : 253
- 2) 246 : 260 : 263
- 3) 206 : 266 : 283
- 4) 276 : 245 : 243

165. Present worth of a bill due 4 years hence is Rs

575. If the bill is due after  $2\frac{1}{2}$  years, its present worth is Rs 620. Find the rate per cent per annum.



- 1) 6%                      2) 7%  
3) 8%                      4) 5%
166. A man purchased a horse and a carriage. If he sells the horse at 10% loss and carriage at 10% profit he neither gains nor loses. If he sells the horse at 5% gain and carriage at 5% loss he loses Rs 10 in all. Find the Cost Price of each of the horse and the carriage.  
1) Rs 200 and Rs 150    2) Rs 400 and Rs 200  
3) Rs 250 and Rs 200    4) Rs 300 and Rs 150
167. A can do a piece of work in 90 days, B in 40 days and C in 12 days. They work for a day each in turn, i.e. first day A does it alone, B does it the second day, and C the third day. After that A does it for another day, and so on. After finishing the work they get Rs 240. If the wages are divided in proportion to the work done by them, find what each will get.  
1) A Rs 24, B Rs 54 and C Rs 162  
2) A Rs 22, B Rs 50 and C Rs 132  
3) A Rs 26, B Rs 52 and C Rs 142  
4) A Rs 20, B Rs 44 and C Rs 182
168. A owes B, Rs 1,573 payable  $1\frac{1}{2}$  years hence. Also, B owes A, Rs 1,444.50 payable 6 months hence. If they want to settle the account forthwith, keeping 14% as the rate of interest, then who should pay and how much?  
1) A, Rs 28.50              2) B, Rs 37.50  
3) A, Rs 50                  4) B, Rs 50
169. Consider the volumes of the following:  
A. A parallelopiped of length 5 cm, breadth 3 cm and height 4 cm.  
B. A cube of each side 4 cm.  
C. A cylinder of radius 3 cm and length 3 cm.  
D. A sphere of radius 3 cm.  
The volumes of these in the decreasing order are  
1) A, B, C and D            2) A, C, B and D  
3) D, B, C and A            4) D, C, B and A
170. If an area enclosed by a circle or a square or an equilateral triangle is the same, then the maximum perimeter is possessed by  
1) circle  
2) square  
3) equilateral triangle  
4) both triangle and square
171. If the height of a triangle is decreased by 40% and its base is increased by 40%, what will be the effect on its area?  
1) No change                2) 8% decrease  
3) 16% decrease            4) 16% increase
172. If  $\log_{12} 27 = a$ , then  $\log_6 16$  is  
1)  $(3-a)/4(3+a)$         2)  $(3+a)/4(3-a)$   
3)  $4(3+a)/(3-a)$         4)  $4(3-a)/(3+a)$
173. Mr Dua invested money in two schemes A and B offering compound interest @ 8% pa and 9% pa respectively. If the total amount of interest accrued through two schemes together in two years

was Rs 4,818.30 and the total amount invested was Rs 27,000, what was the amount invested in Scheme A?

- 1) Rs 12,000                  2) Rs 13,500  
3) Rs 15,000                  4) Cannot be determined

174. Consider the following statements:

If a sum of money is lent at simple interest, then the

A. money gets doubled in 5 years if the rate of

interest is  $16\frac{2}{3}\%$ .

B. money gets doubled in 5 years if the rate of interest is 20%.

C. money becomes four times in 10 years if it gets doubled in 5 years.

Of these statements,

- 1) A and C are correct    2) B alone is correct  
3) C alone is correct    4) B and C are correct

175. Which of the following is true?

A.  $99/101 < 97/99 < 95/97$

B.  $95/97 < 97/99 < 99/101$

C.  $\{95/97\}^2 > \{97/99\}^2 > \{99/101\}^2$

D.  $\{99/101\}^2 > \{97/99\}^2 > \{95/97\}^2$

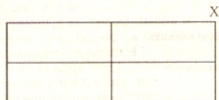
1) Only A

2) Only B

3) Only B and C

4) Only B and D

176. In the figure, how many paths are there from A to X if the only ways to move are up and to the right?



A

X

1) 4

2) 5

3) 6

4) 9

177. A farmer decided to build a wire fence along one straight side of his property. For this, he planned to place several fence-posts at 6 m intervals, with posts fixed at both ends of the side. After he bought the posts and wire, he found that the number of posts he had bought was 5 less than required. However, he discovered that the number of posts he had bought would be just sufficient if he spaced them 8 m apart. What is the length of the side of his property and how many posts did he buy?

1) 100 m, 15

2) 100 m, 16

3) 120 m, 15

4) 120 m, 16

178. Four horses are tied on the four corners of a square field of 14 m length so that each horse can just touch the other two horses. They were able to graze in the area accessible to them for 11 days. For how many days is the ungrazed area sufficient for them?

- 1) 3 days 2) 4 days 3) 5 days 4) 2 days  
 179. The circumference of a circular ground is 88 metres. A strip of land, 3 metres wide, inside and along circumference of the ground is to be levelled. What is the budgeted expenditure if the levelling costs Rs 7 per square metre?

- 1) Rs 1,050 2) Rs 1,125  
 3) Rs 1,325 4) Rs 1,650

180. A survey on a sample of 25 new cars being sold at a local auto dealer was conducted to see which of the three popular options—air-conditioning, radio and power windows—were already installed. The survey found:

- 15 had air-conditioning.  
 2 had air-conditioning and power windows but no radios.  
 12 had radio.  
 6 had air-conditioning and radio but no power windows.  
 11 had power windows.  
 4 had radio and power windows.  
 3 had all three options.

What is the number of cars that had none of the options?

- 1) 4 2) 3 3) 1 4) 2

**Directions (Q. 181-184): Select the word that is opposite in meaning to the word in capital letters.**

181. SUBSERVIENT

- 1) dignified 2) lethal  
 3) humble 4) honest

182. DISTRAUGHT

- 1) haughty 2) calm  
 3) stable 4) low

183. MYOPIC

- 1) black 2) gloomy  
 3) farsighted 4) perfumed

184. TENACIOUS

- 1) faint-hearted 2) yielding  
 3) erroneous 4) praiseworthy

**Directions (Q. 185-188): Choose the word that is similar in meaning to the word given in capital letters.**

185. SERENDIPITY

- 1) peace 2) luck  
 3) joy 4) fate

186. VITRIOLIC

- 1) malicious 2) likely  
 3) alcoholic 4) fragile

187. PUCKISH

- 1) cheerful 2) disc-like  
 3) gullible 4) mischievous

188. DAPPER

- 1) unspoilt 2) chaste  
 3) innocent 4) neat

**Directions (Q. 189-193): Each of the sentences is divided into four parts (1), (2), (3) and (4). Choose the part that has an error.**

- 189.1) During the last centuries

- 2) whaling voyages departed regularly from the New England states  
 3) and because each voyage normally extends for years

- 4) the hold was packed with supplies before a whaling ship set sail.

190.1) The Rotary Club applauded

- 2) Hari and I  
 3) for our work

- 4) helping the handicapped in town find secure jobs.

191.1) Because they refuse to follow the conventional dress code

- 2) neither Shivani  
 3) nor her friends  
 4) is invited to the local society Function.

192.1) The reason why

- 2) he was rejected  
 3) was  
 4) because he was too young.

193.1) The moment they came to know

- 2) that their leader  
 3) was issued a charge sheet  
 4) the entire group of workers went on a strike.

**Directions (Q. 194-197): Each question consists of a group of sentences followed by a sequential arrangement. Select the best sequence.**

194. A. An empiricist is one who observes how things work and is prepared to try things out.

- B. As a scientist he would prefer to work from observation than from preconceived theory.

- C. The empiricist looks first and thinks later.

- D. An empiricist is normally contrasted with a rationalist who believes that the mind can work out.

- E. The rationalist thinks first and looks later.

- 1) ABDCE 2) ABCDE 3) DCABE 4) ABEDC

195. A. Such a national policy will surely divide and never unite people.

- B. In fact, it suits the purpose of the politicians; they can drag the people into submission by appealing to them in the name of religion.

- C. In order to inculcate unquestioning belief, they condemn other states which do not follow their religion.

- D. The emergence of theocratic states, where all types of crimes are committed in the name of religion, has revived the religion of the Middle Ages.

- 1) ABCD 2) DBCA

- 3) DBAC 4) CDAB

196. A. The remnants of such a supernova remain discernible for thousands of years after explosion.

- B. Only such supernova can make the heaviest elements like gold and uranium.

- C. For a few weeks, an exploding star glows more brightly than a million suns and its interior collapses to make another star.

- D. Massive stars not only burn up extremely fast but perish more spectacularly in supernova explosions.
- 1) ABCD                      2) ADCB  
3) DCBA                      4) BDCA
197. A. There are also two scorers.  
B. After each over they swap positions.  
C. In the early 1990s, a third umpire was introduced for test matches.  
D. The essential officials in the field are two umpires who control the field.  
E. One stands at the bowler's end, the other is square on to the batting wickets so that the batsman has his back to him.
- F. The umpire's main duties are to: judge whether a batsman is out in answer to an appeal of "how's that?" from the fielding side; to ensure that the batting, bowling and fielding are within the laws; to signal boundaries, leg-byes, byes, wides, no balls and short runs to the scorers; to decide if conditions are fit or unfit for play.
- 1) DCBFAE                      2) FDCBAE  
3) DEBFAC                      4) FEBACD
- Directions (Q. 198-200): The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph.**
198. A. In the west, Allied Forces had fought their way through southern Italy as far as Rome.  
B. In June 1944 Germany's military position in World War Two appeared hopeless.
- C. In Britain, the task of amassing the men and materials for the liberation of northern Europe had been completed.  
D. The Red Army was poised to drive the Nazis back through Poland.  
E. The situation on the eastern front was catastrophic.
- 1) EDACB                      2) BEDAC  
3) BDECA                      4) CEDAB
199. A. He felt justified in bypassing Congress altogether on a variety of moves.  
B. At times he was fighting the entire Congress.  
C. Bush felt he had a mission to restore power to the presidency.  
D. Bush was not fighting just the democrats.  
E. Representative democracy is a messy business, and a CEO of the White House does not like a legislature of second-guessers and time wasters.
- 1) CAEDB                      2) DBAEC  
3) CEADB                      4) ECDBA
200. A. The two neighbours never fought each other.  
B. Fights involving three male fiddler crabs have been recorded, but the status of the participants was unknown.  
C. They pushed or grappled only with the intruder.  
D. We recorded 17 cases in which a resident that was fighting an intruder was joined by an immediate neighbour, an ally.  
E. We therefore tracked 268 intruder males until we saw them fighting a resident male.
- 1) BEDAC                      2) DEBAC  
3) BDCAE                      4) CBEDA

### Answers and explanations

1-5:

Subject	No. of boys appeared	No. of girls appeared	Total appeared
Physics	114	79	193
Chemistry	119	81	200
Math	120	81	201
Botany	115	86	201
Zoology	115	83	198

1. 2: It is given that maximum no. of students who did not appear for the exam = 15.  
∴ The maximum no. of students in Class XI of the school  
= (The minimum number of students who appeared for the exam) + 15  
= 193 + 15 = 208
2. 1: The number of students who obtained 60% or more marks in Physics = 117  
The number of students who obtained 60% or more marks in Mathematics = 124  
The least number of students who have qualified the exam = maximum (117, 124) = 124.
3. 4: Assuming that the students who did not appear for the exam are boys, the maximum number of boys in Class XI  
= 114 + 15 = 129
4. 3: The minimum number of students in Class XI of the school  
= (Maximum no. of students who appeared in any one of the subjects) + 5  
= 201 + 5 = 206
5. 4: As there is no information about the number of boys in Class XI of the school, we can't determine the answer.
- 6-9: We know  $s = ut + \frac{1}{2}at^2$

where

u = initial speed in km/hr

t = time in hour

a = acceleration

s = distance covered

Slot	Distance covered
0-1	$0 \times 1 + \frac{1}{2} \times 20 \times 1^2 = 10 \text{ km}$
1-2	20 km
2-4	$20 \times 2 + \frac{1}{2} \times \frac{40}{2} \times 2^2 = 80 \text{ km}$
4-6	120 km
6-7	$60 \times 1 + \frac{1}{2} \times 10 \times 1^2 = 65 \text{ km}$
7-8	$70 \times 1 + \frac{1}{2} \times (-20) \times 1^2 = 60 \text{ km}$
8-9	$50 \times 1 + \frac{1}{2} \times (-10) \times 1^2 = 45 \text{ km}$
9-10	$40 \times 1 + \frac{1}{2} \times (-20) \times 1^2 = 30 \text{ km}$

$$6.3; \text{ Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$= \frac{10 + 20 + 80 + 120 + 65 + 60 + 45 + 30}{10}$$

$$= \frac{430}{10} = 43 \text{ km/hr}$$

**Alternate Method:**

Required average speed

$$= \frac{10 \times 1 + 20 \times 1 + 40 \times 2 + 60 \times 2 + 65 \times 1 + 60 \times 1 + 45 \times 1 + 30 \times 1}{10}$$

$$= \frac{430}{10} = 43 \text{ km/hr}$$

Slot	Total distance covered
1. 0-2 hrs	30 km
2. 2-4 hrs	80 km
3. 4-6 hrs	120 km
4. 6-8 hrs	125 km

8. 2; It is obvious from the graph given.

9. 2; In the 8th hour, acceleration is  $20 \text{ km/hr}^2$ .

If it continues then speed in the 9th hour

$$= 50 - 20 = 30 \text{ km/hr}$$

Speed in the 10th hour =  $30 - 20 = 10 \text{ km/hr}$ 

Hence, the speed will be zero at 10 hrs 30 mins.

Courses	Number of common students
---------	---------------------------

1. TA, MBCA, YCA	2
2. DMBC, TA, PG	3
3. YCA, PM, XA	2
4. DMBC, PG, XA1	

Roll numbers	Common subjects
--------------	-----------------

1. 1 and 8	Three
2. 3 and 6	Three

3. 9 and 10

4. 2 and 5

12. 2; **Subjects**

1. XA

2. TA

3. MBCA

4. DMBC

13. 4; It is obvious from the table given.

14. 3

15. 1; **From I:** We get:

$$(y - x)(x + y) = 24 - 24 = 0$$

$$\text{or, } y^2 - x^2 = 0$$

$$\text{or, } y^2 - x^2 = 0$$

$$\therefore \frac{x^2}{y^2} = 1$$

Hence, from I, we get 'No' as our answer.

**From II:**If  $x < y$ 

Take two cases

$$(1) x = 3 < y = 4$$

$$(2) x = -5 < y = 4$$

In case (1) the answers yes. But in case (2) answer is no.

16. 3; **From I:** We get that Rs 90 is 120 per cent of the cost price.

Hence, required profit

$$= 100 - \frac{90}{120} \times 100$$

$$= 100 - 75 = \text{Rs } 25$$

**From II:** We get

Cost price : Profit = 3 : 1

This implies

Selling price : Profit = 4 : 1

$$\text{Thus, the required profit} = \frac{100}{4} = \text{Rs } 25$$

17. 3; **From I:** Required rate of interest

$$= \frac{\text{Difference between CI and SI}}{\text{SI in one year}} \times 100$$

$$= \frac{43.20}{(3600 \div 5)} \times 100$$

$$= \frac{43.20}{720} \times 100 = 6\%$$

**From II:** Difference between CI and SI

$$= \frac{S \times r^2 (300 + r)}{100^3}$$

where S = sum

r = rate of interest

$$\text{Rs } 132.19 = \frac{12000 \times r^2 (300 + r)}{100^3}$$

$$\therefore r = 6\%$$

18. 4; **From A:** We get

$$\text{Total marks} = \frac{(12 + 8)}{(42 - 38)} \times 100 = 500$$



Minimum marks required to pass in the examination

$$= \left( 500 \times \frac{38}{100} \right) + 8 = 198$$

**From B:** We get

$$\text{Total marks} = \frac{25}{(40-35)} \times 100 = 500$$

Minimum marks required to pass in the examination

$$= 500 \times \frac{35}{100} + 23$$

$$= 175 + 23 = 198$$

**From C:** We can't get the required pass marks because we have no information regarding total marks.

19.4; **From B and C:** We get

$$V : R : A$$

$$\text{Investment } 200 \quad 150 \quad 100$$

$$\Rightarrow 4 : 3 : 2$$

R' share in the profit

$$= \frac{4000}{(4-2)} \times 3 = \text{Rs } 6000$$

20.4; Suppose the labelled price is Rs 100. Then

$$\text{Cost price} = \text{Rs } 85$$

$$\text{Profit} = \text{Rs } 2$$

$$\text{Selling price} = \text{Rs } 87$$

$$\text{Now, the actual profit} = \frac{2}{87} \times 3060$$

$$= \text{Rs } 70.35$$

21.4; **From A and B:**

Note that the work can be finished by  $(10 \times 2 +$

$$15) \times \frac{120}{7} \text{ women, i.e. } 600 \text{ women, in one day}$$

Hence, the required number of days to finish the remaining work

$$= \frac{600 - (15 \times 2 + 20) \times 5}{(15-5) \times 2 + (20-8)}$$

$$= \frac{(600-250)}{32} = \frac{350}{32}$$

$$= 10 \frac{30}{32} \text{ days}$$

**From B and C:**

The whole work can be finished by  $(20 \times 2 \times 15)$  women, i.e. 600 women, in one day.

Hence, the required number of days to finish the remaining work will be the same as we obtained above, i.e.  $10 \frac{30}{32}$  days.

**From A and C:**

We get the efficiencies of

$$\left( 10 \times \frac{120}{7} \right) M + \left( 15 \times \frac{120}{7} \right) W = (20 \times 15) M$$

$$\text{or, } \frac{1800}{7} W = \left( 300 - \frac{1200}{7} \right) M$$

$$\text{or, } \frac{M}{W} = \frac{1800}{7} \div \frac{900}{7} = \frac{1800}{900} = \frac{2}{1}$$

$$\therefore M = 2W$$

Again we get that the whole work can be completed by  $(20 \times 15 \times 2)$  women, i.e. 600 women, in one day.

Now, the required number of days to finish the remaining work

$$= \frac{600 - (15 \times 2 + 20) \times 5}{(15-5) \times 2 + (20-8)} = 10 \frac{30}{32} \text{ days}$$

22.4; To solve the question we need two information:

1. Area of the hall

2. Rate of flooring

Our requirements can be fulfilled by any two of the three.

Note that

$$\text{Area of the hall} = L \times B$$

and,

$$2 \times (L + B) = \text{Perimeter of the hall}$$

**23.25:** It is a case of two-step shifting. Because the change in the input to step I is the same as the change in step II to step III (but not similar to the change from step I to step II). Also, the change from step I to step II is same as the change from step III to step IV.

If the input is

$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$

Step I, becomes

$$1 \quad 6 \quad 5 \quad 4 \quad 3 \quad 2 \quad 7 \quad [\text{say logic P}]$$

And

if the step I is

$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$

Step II, becomes

$$1 \quad 3 \quad 2 \quad 4 \quad 6 \quad 5 \quad 7 \quad [\text{say logic Q}]$$

On the basis of the two logic P and Q, make a chart of steps before solving the given questions.

**Input:** A B C D E F G

**Step I:** A F E D C B G

**Step II:** A E F D B C G

**Step III:** A C B D F E G

**Step IV:** A B C D E F G

**Step V:** A F E D C B G

**Step VI:** A E F D B C G

**Step VII:** A C B D F E G

Note that step IV is the same as the input.

23.1; From the chart it is obvious that step VII will be the same as step III.

24.2; **Step VII:**

slow ran dhurwa pat hak dig vi

A C B D F E G

**Step V:**

slow hak dig pat ran dhurwa vi

A F E D C B G

25.3; **Input:**

Ana dhir raj ran san rah aji  
 A B C D E F G  
 Ana san rah ran dhir raj aji  
 A E F D B C G

Now, look at the chart: the given arrangement is either step II or step VI.

## 26-30:

Intelligence	Person	Gender	Profession	Status
1. (Most intelligent)	E	Female	Psychologist	Unmarried
2.	C	Female	Business	Married
3.	A or G	Male	Doctor	Married
4.	G or A	Male	Engineer	Married
5.	B	Male	Student	Unmarried
6.	D	Male	Architect	Unmarried
7. (Least intelligent)	F	Female	Teacher	Married

D F E C B  
 — — — — —  
 Architect Teacher Psychologist Business Student

26.1 27.4 28.4

29.4

30.4; Both 1 and 2

31.3; The series consists of pairs of letters. In each pair the first letter and the second letter are the same-positioned letters from the left and right end of English alphabet respectively.

+6 +6 +6 +6  
 AZ GT MN SH YB  
 (1) (7) (13) (19) (25)

32.4; The first letter follows +1, -2, +3, -4, ... series.

The number follows +2, +3, +4, ... series.

The last letter follows -2 series.

33.3; The series is

gfef / gfeif / gfeif / gfeif

34.2;

A C E L D N R A  
 1 2 3 4 5 6 7 8  
 C A L E N D A R  
 2 1 4 3 6 5 8 7

Similarly,

L E G I B I E L  
 1 2 3 4 5 6 7 8  
 E L I G I B L E

2 1 4 3 6 5 8 7

35.4; Logic is very simple. Each letter has been coded by the number which denotes the position of the letter in the English alphabet.

Therefore, we can conclude that 31385 stands for CACHE.

36.4; From the statement it is obvious that 'Y' is the sister of 'X'. Hence, 'X' is the brother of 'Y'.

37.4; The required distance will be more than 6 km but less than 8 km. It can be 6.1 km, 6.2 km etc.

38.3

39.4; Total number of persons in the row

$$= 15 + 4 - 1 = 18$$

Motilal's position from the right

$$= (18 - 7) + 1$$

$$= 12\text{th}$$

40.4;  $\therefore 11 + 22 = 33$

41.1; From the given information we get that Sudha's marks is more than six but less than eight. According to the given choices, Sudha's marks = 7

42.3; Note that the question focuses on the beginning of the passage. It is true, however, that later on the tone becomes polite and towards the end even deferential.

43.3 44.1

45.1; The reason has been stated in the penultimate para.

46.3; Note that the author says about his work — "wherein I have endeavoured to laugh mankind out of its favourite follies and vices".

47.1 48.1 49.4 50.4

51.2 52.2

53.4; This depends on whether the crisis has been faced alone or together.

54.4 55.3 56.2

57.1; Clear from first sentence of third para.

58.3 59.4 60.1 61.2

62.4 63.2 64.2 65.3

66.2 67.2 68.2 69.4

70.1 71.1 72.3 73.3

74.4 75.3 76.1 77.4

78.4 79.1 80.2 81.2

82.3; **From A:**

We get

$$(x - 1) + (x - 1) + x = 25$$

$$\therefore x = 9$$

Hence, the longest piece is 9 metre.

**From B and C:** We get

$$x + x + x = \frac{112.5}{100} = 25$$

$$\therefore x = 8$$

Hence, the longest piece is 9 metre. But this assumes that smallest pieces are of equal length. What if the largest pieces are equal?

Hence only A gives the answer. B and C together are redundant.

83. 3

84. 4; All the three statements are necessary.

85. 1

86-90:

It is given that the no. of lakh units sold by Moonfeast and Enivita is identical in Feb 06 (point 4 of question part).

We have different possible values. Also the sum of PI is not greater than 100 in any of the given months.

Therefore, no. of lakh units sold by Moonfeast and Enivita in the month of February is not greater than 3.

Suppose, Moonfeast and Enivita sold 3 lakh units each in the month of Feb 06.

According to condition (5),

$$13 \times 6 + (3+3)3$$

$$= 7 \times 4 + 4 \times 3 + 26 + x$$

(where  $x$  is the point earned by Enivita in Jan 06)

$$\Rightarrow 96 = 66 + x$$

$$\Rightarrow x = 30$$

But we can't get 30 points from any combination of table-I.

Therefore, no. of lakh units sold by Enivita in Feb 06  $\neq$  3.

Suppose, Moonfeast and Enivita sold 2 lakh units each in the month of Feb 06.

According to condition (5),

$$13 \times 6 + (2+2)3 = 7 \times 4 + 4 \times 3 + 26 + x$$

$$\Rightarrow 90 = 66 + x$$

$$\Rightarrow x = 24$$

Only one combination gives 24 points, ie  $(6 \times 4)$ . Hence, the no. of lakh units sold by Enivita in Jan 06 is 6.

Hence, the sum of no. of lakh units sold by all the three companies in each of the months is 17.

Sum of the no. of units sold in all the six months =  $17 \times 6 = 102$  lakhs.

And sum of the no. of units of each of the company in all the six months

$$= \frac{102}{3} = 34 \text{ lakhs.}$$

From condition (5), the Point Index (PI) in May 06 =  $90 - 17 = 73$

We have to find the combination in which PI is 73 and sum of no. lakh units sold = 17. The one and only combination is (11, 2, 4). But it is not clear what is the order of (11, 2, 4) is ie which company sold 11 lakh units and which company sold 2 lakh units, etc.

The sum of PI in March 06 is 1 less than Jan 06, ie  $64 - 1 = 63$ . Now we find the possible conditions. Also, no. of lakh units sold by any

two companies is identical. The only possible combination is (6, 6, 5). But the order is not clear.

From condition (8), the least possible PI is in April 06 if total no. of units sold is 17 lakh units. The one and only combination is (5, 5, 7) and we get Point Index 58.

Also, from condition (6)  $\rightarrow$  no. of units sold by Moonfeast in Mar 06 and Apr 06 together = No. of units sold by Moonfeast in May 06, ie  $5 + 6 = 11$ . Combining the above results, we get the following results:

Name of Month	Moonfeast	Warle G	Enivita	PI	Rank given
Jan, 06	7	4	6	64	4
Feb, 06	2	13	2	90	1
March, 06	6	6/5	6/5	63	5
April, 06	5	5/7	5/7	58	6
May, 06	11	2/4	2/4	73	2
June, 06	—	—	—	—	3

Also sum of each of the columns is 34 and that of each of the rows is 17. We get the final result as

Name of Month	Moonfeast	Warle G	Enivita	PI	Rank given
Jan, 06	7	4	6	64	4
Feb, 06	2	13	2	90	1
March, 06	6	6	5	63	5
April, 06	5	5	7	58	6
May, 06	11	2	4	73	2
June, 06	3	4	10	71	3

86. 1    87. 4    88. 1    89. 2

90. 4; PI of Warle G in all the six months together  
 $= (4 + 5 + 2 + 4) \times 3 + 6 \times 4 + 13 \times 6$   
 $= 45 + 24 + 78 = 147$

91. 2; Salary of Rajiv = Rs 1,50,000

Standard deduction = Rs 30,000

$\therefore$  Taxable income = Rs 1,50,000 - Rs 30,000  
 $=$  Rs 1,20,000

$\therefore$  Tax liability = 10% of (60,000 - 50,000) + 20% of (1,20,000 - 60,000)



$$= 1,000 + 12,000 = \text{Rs } 13,000$$

$$\text{Rebate} = 20\% \text{ of Rs } 40,000 = \text{Rs } 8,000$$

$$\therefore \text{Tax liability after rebate}$$

$$= \text{Rs } 13,000 - \text{Rs } 8,000 = \text{Rs } 5,000$$

$$\text{Tax surcharge} = 10\% \text{ of Rs } 5,000 = \text{Rs } 500$$

$$\therefore \text{Total tax liability} = \text{Rs } 5,000 + \text{Rs } 500 = \text{Rs } 5,500$$

$$92.3; \text{New salary} = \text{Rs } 1,50,000 + \text{Rs } 5,000 = \text{Rs } 1,55,000$$

$$\text{Standard deduction} = \text{Rs } 25,000$$

$$\therefore \text{Taxable income} = \text{Rs } 1,55,000 - \text{Rs } 25,000 = \text{Rs } 1,30,000$$

$$\therefore \text{Tax liability} = 10\% \text{ of } (60,000 - 50,000) + 20\% \text{ of } (1,30,000 - 60,000)$$

$$= 1,000 + 14,000 = \text{Rs } 15,000$$

$$\text{Rebate} = 15\% \text{ of Rs } 40,000 = \text{Rs } 6,000$$

$$\therefore \text{Tax liability after rebate}$$

$$= \text{Rs } 15,000 - \text{Rs } 6,000 = \text{Rs } 9,000$$

$$\text{Tax surcharge} = 10\% \text{ of Rs } 9,000 = \text{Rs } 900$$

$$\therefore \text{Total tax} = \text{Rs } 9,900$$

$$\therefore \text{Net income after tax}$$

$$= \text{Rs } 1,55,000 - \text{Rs } 9,900 = \text{Rs } 1,45,100$$

$$\text{Net income after tax in Q.91}$$

$$= \text{Rs } 1,50,000 - \text{Rs } 5,500 = \text{Rs } 1,44,500$$

$$\therefore \text{Increase} = \text{Rs } 1,45,100 - \text{Rs } 1,44,500 = \text{Rs } 600$$

$$93.2; \text{Like Rajiv's in Q. 91, Shruti's initial tax liability} = \text{Rs } 13,000.$$

Being a woman, she will get a rebate of Rs 5,000. So she needs a rebate of Rs (13,000 - 5,000 =) 8,000 through investments. This would be fetched through investing

$$\text{Rs } 8,000 \times \frac{100}{20} = \text{Rs } 40,000.$$

$$94.4$$

$$95.1; \text{Net revenue per Esteem sold}$$

$$= \frac{17\% \text{ of } 11,39,200}{20\% \text{ of } 653610}$$

$$= \frac{17 \times 1139200}{20 \times 653610}$$

$$\approx 1.481495 \text{ million}$$

$$\approx \text{Rs } 14,81,495$$

$$96.2; \text{It is obvious from the graph.}$$

$$\text{Note that } \frac{21}{11} > \frac{48}{58} > \frac{17}{20} > \frac{3}{3}$$

$$97.4; \text{Required per cent decrease}$$

$$= \frac{25\% \text{ of } 11}{58} \times 100$$

$$= \frac{1100}{58 \times 4} \approx 4.75\%$$

$$98.3; \text{The required per cent}$$

$$= \frac{3}{(100-11)} \times 100 = \frac{300}{89} \approx 3.37\%$$

$$99.4$$

$$100.2; \text{Required probability}$$

$$= \frac{4! \times 3!}{7!} = \frac{1}{35}$$

$$101.3; \text{From the question it is clear that both bodies will travel same distance, ie } 30.625 \text{ cm.}$$

**For the first body:**

$$S = ut + \frac{1}{2}at^2$$

$$30.625 = 0 \times t + \frac{1}{2} \times 9.8 \times t^2$$

$$\Rightarrow \frac{61.25}{9.8} = t^2$$

$$\Rightarrow t = 2.5 \text{ sec.}$$

**For the second body:**

$$30.625 = u \times 2.5 - \frac{1}{2} \times 9.8 \times (2.5)^2$$

$$30.625 = 2.5u - 30.625$$

$$u = \frac{61.25}{2.5} = 24.5 \text{ m/s}$$

$$102.4$$

$$103.1; \text{Required time} = \frac{(2 \times 1000 + 200 + 300)}{(20 + 30)}$$

$$= \frac{2500}{50} = 50 \text{ seconds}$$

$$104.2; \text{Required probability} = 1 - \frac{25}{25 \times 25} = \frac{24}{25}$$

$$105.3; \text{Go through the given options.}$$

$$106.3; \text{We have}$$

$$x + (x + a) + (x + 2a) \dots + (x + 39a) = 3600$$

$$\text{or, } 40x + a(1 + 2 + \dots + 39) = 3600$$

$$\text{or, } 40x + \frac{(39 \times 40)}{2}a = 3600$$

$$\text{or, } 40x + 780a = 3600$$

$$\text{or, } 2x + 39a = 180 \dots (i)$$

Again,

$$x + (x + a) + \dots + (x + 29a) = 2400$$

$$\text{or, } 30x + \frac{30 \times 29}{2}a = 2400$$

$$\text{or, } 2x + 29a = 160 \dots (ii)$$

From (i) and (ii), we get

$$a = 2 \text{ and } x = 51$$

$$\therefore \text{8th instalment} = 51 + (7 \times 2) = 65$$

$$107.4; \text{Required number of ways}$$

$$= 8! \times 5 \times 4! \times 4$$

$$= 19,353,600$$

$$108.4; \text{The number of times the person will go}$$

$$= {}^8C_3 = 56$$

The number of times each child will grow

$$= \frac{56 \times 3}{8} = 21$$

The number of times a particular child will not

$$go = 56 - 21 = 35$$

109.4

110.3

111. 1; Suppose the total distance is  $120 \times 2$   
 $= 240$  km  $\therefore$  LCM of 40 and 60 = 120]  
 Now, the required average speed

$$= \frac{240}{\frac{120}{40} + \frac{120}{60}} = \frac{240}{5} = 48 \text{ km/hour}$$

112. 1;  $v^2 = u^2 - 2gx$

$$\Rightarrow 0 = u^2 - 2gx \Rightarrow u = \sqrt{2gx}$$

$$v = u - gt$$

$$\Rightarrow 0 = u - gt \Rightarrow u = gt$$

$$\sqrt{2gx} = gt$$

$$\Rightarrow t = \sqrt{\frac{2x}{g}} = 0.45\sqrt{x}$$

113. 1; Initial velocity of coin is -10 m/s.

Find velocity at the time of impact.

$$v = u + at$$

$$v = -10 + 9.8 \times 4 = 29.2 \text{ m/s.}$$

Distance covered

$$s = -10 \times 4 + \frac{1}{2} \times 9.8 \times 16$$

$$= -40 + 78.4 = 38.4 \text{ m.}$$

114. 3; Suppose the total number of workers in the company is 10,000. Then the number of

(i) skilled workers = 7,500

(ii) unskilled workers = 2,500

(iii) permanent workers = 80% of 7,500 + 20% of 2,500 = 6,500

(iv) temporary workers = 10,000 - 6,500 = 3,500

Again, since the number of temporary workers is 126, the total number of the workers in the company

$$= \frac{10,000}{3,500} \times 126 = 360$$

115. 2; From the given information we get  
 $(12.5 + 6) = 18.5\%$  of the cost price of the article = Rs 92.50

$$\therefore \text{required cost price} = \frac{92.50}{18.5} \times 100 = \text{Rs } 500$$

116. 2; Required time to fill the tank

$$= \frac{1}{\frac{1}{12} + \frac{1}{15} - \frac{1}{20}} = 10 \text{ minutes}$$

117. 2; Remaining work =  $1 - \left(\frac{1}{3} + \frac{2}{9}\right) = \frac{4}{9}$

According to the given information, 4 men and 10 women can complete the whole work in 12

days. Whereas 6 men and 12 women can complete the whole work in 9 days. The above information implies that efficiency of 48 men + 120 women = 54 men + 108 women

or 6 men = 12 women

or, 1 man = 2 women

Again, the above information implies that  $(4 \times 2 + 10 =)$  18 women can complete the whole work in 12 days, i.e. 216 women can complete the whole work in one day.

To finish the remaining work in three days we need a strength having efficiency equal to a

$$\text{group of } \frac{216}{3} \times \frac{4}{9} = 32 \text{ women}$$

Present strength is 6 men + 12 women, i.e. 24 women.

Thus, the required number of women =  $32 - 24 = 8$

118. 4; Data inadequate.

The ratio of the contents in the three vessels is not known.

119. 1; The speed of the train starting from Delhi

$$= \frac{200}{4} = 50 \text{ km/hr}$$

The speed of the train starting from Meerut

$$= \frac{200}{3.5} = \frac{400}{7} \text{ km/hr}$$

Suppose the two trains meet  $x$  hours after 6:00

$$\text{AM. Then } x \times 50 + (x - 2) \times \frac{400}{7} = 200$$

$$\text{or, } 350x + 400x - 800 = 1400$$

$$\text{or, } 750x = 2200$$

$$\text{or, } x = \frac{2200}{750} = 2 \text{ hrs } 56 \text{ min.}$$

Hence, the required time = 8 : 56 AM

120. 4 121. 1 122. 3, 123. 2 124. 1 125. 4

126. 4 127. 1 128. 3 129. 2 130. 3 131. 3

132. 1 133. 4 134. 4 135. 3 136. 4 137. 4

138. 4 139. 4

140. 4; I is an absurd argument. Hence, I is not strong. II is not always true. Hence, II is not strong.

141. 4; I does not add reason and hence fails to justify the move. Hence, I is not strong. II does not focus on the need for computerisation in the industry. Hence, II is not strong.

142. 1; I is true and desirable. Hence, I is strong. II is an absurd argument. Hence, II is not strong.

143. 3

144. 1

145. 4; The reforms became necessary for greater efficiency in allocating resources.

146. 1; The reforms have introduced bank capital adequacy.

147. 1

148. 4; Look at the first sentence of the passage.

149. 4 150. 1 151. 2 152. 3

153. 1 154. 3

155. 4; I is silent on what the excitement is about. 2 sees IT industry in isolation. In 3 the reference to the crucial first sentence—“perspective of potential”—is missing.

156. 1; Conclusion I follows from conversion of the statement (a). Conclusion II follows from conversion of the statement (b). Again, statement (a) + statement (b) gives conclusion III [ $\therefore I + A = I$ ]. Hence, conclusion III follows but conclusion IV does not follow.

157. 3; Conclusion I is the implication of statement (a). Hence; conclusion I follows. Again, statement (b) + statement (a) gives conclusion III [ $I + E = O$ ]. Hence, conclusion III follows but conclusions II and IV do not follow.

158. 3; Statement (a) + statement (b) gives conclusion I [ $\therefore I + A = I$ ]. Hence, conclusion I follows. Conversion of statement (b) gives conclusion II. Hence, conclusion II follows. Again, statement (b) + statement (c) gives no conclusion [ $\therefore A + I = \text{no conclusion}$ ]. Hence, conclusion III does not follow. Again, conclusion I + statement (c) gives no conclusion [ $\therefore I + I = \text{no conclusion}$ ]. Hence, conclusion IV does not follow.

159. 4; Statement (a) + statement (b) gives conclusion “Some big are not large” [ $\therefore I + E = O$ ]. Hence, neither conclusion I nor conclusion II follows. Again, statement (b) + statement (c) gives conclusion “Some tiny are not small” [ $\therefore E + I = O$ ]. Hence, conclusion III does not follow. Again, “Some big are not large” + statement (c) gives no conclusion [ $\therefore O + I = \text{no conclusion}$ ]. Hence, conclusion IV does not follow.

160. 2; Statement (a) + conversion of statement (b) gives no conclusion [ $\therefore E + E = \text{no conclusion}$ ]. Hence, neither conclusion III nor conclusion IV follows. But since conclusions III and IV make (EI-type) complementary pair. Hence either conclusion III or conclusion IV follows. Again, conversion of statement (b) + statement (c) gives conclusion “Some roses are not sweater” [ $\therefore E + I = O$ ]. Hence, conclusion II follows but conclusion I does not follow.

161. 4; We have the following information:

\* 90% of the voters voted.

\* Elected candidate got 47% of the total votes.

\* Opponent got (43% of the total votes - 60) votes.

\* 60 votes were declared invalid.

Now, according to the question, 4% of the total votes =  $308 - 60 = 248$

Hence, the number of votes obtained by elected candidate

$$= \frac{248}{4} \times 47 = 2914$$

The number of votes obtained by opponent candidate

$$= \frac{248}{4} \times 43 - 60 = 2606$$

162. 4; Suppose the railway fares of the 1st, 2nd and 3rd classes were Rs 48, Rs 36 and Rs 18 respectively. Then the reduced fares were Rs 40, Rs 33 and Rs 18 respectively. Again, suppose the numbers of passengers travelling in 1st, 2nd and 3rd classes were 9, 12 and 26 respectively.

Then the actual collection from the passengers of 1st class

$$= \frac{9 \times 40}{(9 \times 40 + 12 \times 33 + 26 \times 18)} \times 1088$$

$$= \frac{360}{(360 + 396 + 468)} \times 1088$$

$$= \frac{360 \times 1088}{1224}$$

$$= \text{Rs } 320$$

163. 4; Suppose after x hours the ship will begin to sink.

According to the given information,

$$x = \frac{60}{\left(\frac{15}{4} \times 5 - 12\right)} = \frac{60 \times 4}{(75 - 48)} = \frac{240}{27} \text{ hr}$$

Hence, the required average speed

$$= \frac{40 \times 27}{240} = 4\frac{1}{2} \text{ km per hour}$$

164. 1; Suppose the three parts are x, y and z respectively.

According to the given information,

$$x \times \frac{(100 + 5 \times 2)}{100} = \frac{y \times (100 + 5 \times 3)}{100}$$

$$= \frac{z \times (100 + 5 \times 4)}{100} = k$$

$$\text{or, } x \times \frac{110}{100} = y \times \frac{115}{100} = z \times \frac{120}{100} = k$$

$$\text{or, } x : y = \frac{115}{110} = \frac{23}{22}$$

$$\text{or, } y : z = \frac{120}{115} = \frac{24}{23}$$

Hence,

$$\begin{array}{ccc} x & : & y & : & z \\ 23 & : & 22 & & \\ & & 24 & : & 23 \end{array}$$

$$23 \times 24 : 22 \times 24 : 22 \times 23$$

$$\text{ie } 276 : 264 : 253$$



165. 1; We have

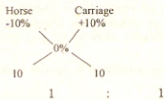
$$\frac{575 \times (100 + 4r)}{100} = \frac{620 \times (100 + 2.5r)}{100}$$

Where  $r$  = rate per cent per annum

$$\text{or, } \frac{(100 + 4r)}{(100 + 2.5r)} = \frac{620}{575} = \frac{124}{115}$$

$$\therefore r = 6\%$$

166. \*;



Hence, the ratio of cost prices of horse and carriage = 1 : 1

Now, look at the given choices, no choices depict the cost prices of the horse and carriage in the ratio 1 : 1.

167. 1; Suppose the work consists of 360 pillars [ $\therefore$  LCM of 90, 40 and 12 is 360].

According to the given information, A, B and C can complete the work in 90 days, 40 days and 12 days respectively.

The above information implies that A, B and C can complete 4, 9 and 30 pillars respectively in one day.

Day	Work done	Person
First	4 pillars	A
Second	9 pillars	B
Third	30 pillars	C

After three days 43 pillars

Similarly, after  $(3 \times 8 =) 24$  days  $(43 \times 8 =) 344$  pillars will get completed.

In the 25th day A will complete 4 pillars whereas in the 26th day B will complete 9 pillars. Thus the remaining 30 pillars will be completed by C in the 27th day.

Thus the whole work will get completed in  $26\frac{3}{30}$ , i.e.  $26\frac{1}{10}$  days

Now, the wages will be distributed according to the part of the work completed by each individual.

A completed  $9 \times 4 = 36$  pillarsB completed  $9 \times 9 = 81$  pillarsC completed  $30 \times 8 + 3 = 243$  pillars

$$\text{Hence, share of A} = \frac{36}{360} \times 240 = \text{Rs } 24$$

168. 3; Present worth of A's amount

$$= \frac{1573}{100 + \frac{3}{2} \times 14} \times 100$$

$$= \text{Rs } 1300$$

Present worth of B's amount

$$= \frac{1444.50}{100 + \frac{1}{2} \times 14} \times 100 = \text{Rs } 1350$$

Thus A will have to pay Rs 50 to B.

169. 4; A. Volume of the parallelepiped

$$= 5 \times 3 \times 4 = 60 \text{ cm}^3$$

$$\text{B. Volume of the cube} = 4 \times 4 \times 4 = 64 \text{ cm}^3$$

$$\begin{aligned} \text{C. Volume of the cylinder} &= \frac{22}{7} \times 3 \times 3 \times 3 \\ &= 84\frac{6}{7} \text{ cm}^3 \end{aligned}$$

$$\begin{aligned} \text{D. Volume of the sphere} &= \frac{4}{3} \times \frac{22}{7} \times 3^3 \\ &= 113\frac{1}{7} \text{ cm}^3 \end{aligned}$$

$$113\frac{1}{7} > 84\frac{6}{7} > 64 > 60$$

$$\therefore D > C > B > A$$

170. 3

171. 3; Required percentage in the area

$$= -40 + 40 + \frac{(-40) \times 40}{100} = -16\%$$

$$172. 4; \log_{12} 27 = \log_{12} 3^3 = 3 \log_{12} 3$$

$$= \frac{3}{\log_3 12} = \frac{3}{\log_3 3 + \log_3 4} = \frac{3}{1 + 2 \log_3 2}$$

$$\Rightarrow \frac{3}{1 + 2 \log_3 2} = a$$

$$\Rightarrow a + 2 \log_3 2 = 3$$

$$\Rightarrow \log_3 2 = \frac{3-a}{2a} \dots (i)$$

$$\log_6 16 = \log_6 2^4 = 4 \log_6 2$$

$$= \frac{4}{\log_2 6} = \frac{4}{\log_2 2 + \log_2 3}$$

$$= \frac{4}{1 + \frac{2a}{3-a}} \left( \log_2 3 = \frac{1}{\log_3 2} \text{ and using (i)} \right)$$

$$= \frac{4}{\frac{3-a+2a}{3-a}}$$

$$= \frac{4(3-a)}{3+a}$$

173. 1; Interest obtained from Scheme A

Interest obtained from Scheme B

$$8 + 8 + \frac{8 \times 8}{100} = 16 \frac{64}{100} \quad 9 + 9 + \frac{9 \times 9}{100} = 18 \frac{81}{100}$$

Overall interest

$$\frac{4818.30}{27000} \times 100 = 17 \frac{761}{900}$$

$$\frac{217}{225}$$

$$\frac{217}{180}$$

Hence the ratio of the amount invested in the Schemes A and B

$$= \frac{\frac{217}{225}}{\frac{217}{180}} = \frac{180}{225} = 4 : 5$$

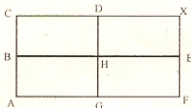
Hence the required sum

$$= \frac{4}{(4+5)} \times 27000 = 12,000$$

174. 2

175. 4

176. 3;

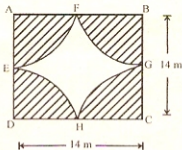


Those paths are:

1. ABCDX
2. ABHDX
3. ABHEX
4. AGHDX
5. AGHEX
6. AGFEX

177. 4; Go through the given options.

178. 1;



Area of the unshaded part

$$= 14 \times 14 - \frac{22}{7} \times 7 \times 7$$

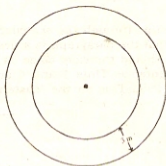
$$= 196 - 154 = 42 \text{ m}^2$$

Now, according to the given information per day, requirement area for grazing

$$= \frac{154}{11} = 14 \text{ m}^2$$

Hence, the remaining ungrazed area is sufficient for grazing for  $(42 \div 14 = 3)$  days.

179. 4;



Circumference of the circular ground

= 88 metres

Radius of the circular ground

$$= \frac{88 \times 7}{2 \times 22} = 14 \text{ metre}$$

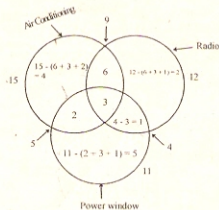
Area of the strip of land

$$= \frac{22}{7} (14^2 - 11^2) = \frac{22}{7} \times 75 \text{ m}^2$$

Now the required expenditure for levelling the strip of land

$$= \frac{22}{7} \times 75 \times 7 = \text{Rs } 1650$$

180. 2;



The required number of such cars

$$= 25 - (4 + 6 + 3 + 2 + 2 + 1 + 5)$$

$$= 25 - 23 = 2$$

181. 1

182. 2

183. 3