



## OPENMAT (XXIII) Entrance Test for Management Programmes 2008

*Total No. of Questions = 200*

*Time : 180 Minutes*

- All questions are compulsory.
- Use of calculator is not allowed. Rough work may be done in the space provided at the back of the Test booklet.
- The Test booklet has the following 4 tests :

|          |                       |                     |
|----------|-----------------------|---------------------|
| Test-I   | General Awareness     | No. of Questions 30 |
| Test-II  | English Language      | No. of Questions 50 |
| Test-III | Quantitative Aptitude | No. of Questions 50 |
| Test-IV  | Reasoning             | No. of Questions 70 |

Read the instructions given on the OMR Response Sheet carefully before you start.

**How to fill up the information on the OMR Response Sheet  
(Examination Answer Sheet)**

1. Write your complete enrolment no. in 9 digits. This should correspond to the enrolment number indicated by you on the OMR Response Sheet. Also write your correct name, address with pin code in the space provided. Put your signatures on the OMR Response Sheet with date. Ensure that the Invigilator in your examination hall also puts his signatures with date on the OMR Response Sheet at the space provided.
2. On the OMR Response Sheet student's particulars are to be filled in by pen. However use HB pencil for writing the Enrolment No. and Examination Centre Code as well as for blackening the rectangle bearing the correct answer number against the serial number of the question.
3. Do not make any stray remarks on this sheet.
4. Write correct information in numerical digit in Enrolment No. and Examination Centre Code columns. The corresponding rectangle should be dark enough and should be filled in completely.
5. Each question is followed by four probable answers which are numbered 1, 2, 3 & 4. You should select and show only one answer to each question considered by you as the most appropriate or the correct answer. Select the most appropriate answer. Then by using HB pencil, blacken the rectangle bearing the correct answer number against the serial number of the question. If you find that answer to any question is none of the four alternatives given under the question you should darken the rectangle '0'.
6. If you wish to change your answer, ERASE completely the already darkened rectangle by using a good quality eraser and then blacken the rectangle bearing your revised answer number. If incorrect answer is not erased completely, smudges will be left on the erased rectangle and the question will be read as having two answers and will be ignored for giving any credit.
7. No credit will be given if more than one answer is given for one question. Therefore, you should select the most appropriate answer.
8. You should not spend too much time on any one question. If you find any particular question difficult, leave it and go to the next. If you have time left after answering all the questions, you may go back to the unanswered ones. There is no negative marking for wrong answers.

## GENERAL INSTRUCTIONS

1. No cell phones, calculators, books, slide-rules, note-books or written notes, etc. will be allowed inside the examination hall.
2. You should follow the instructions given by the Centre Superintendent and by the Invigilator at the examination venue. If you violate the instructions you will be disqualified.
3. Any candidate found copying or receiving or giving assistance in the examination will be disqualified.
4. The Test Booklet and the OMR Response Sheet (Answer Sheet) would be supplied to you by the Invigilators. After the examination is over, you should hand over the OMR Response Sheet to the Invigilator before leaving the examination hall. Any candidate who does not return the OMR Response Sheet will be disqualified and the University may take further action against him/her.
5. All rough work is to be done on the test booklet itself and not on any other paper. Scrap paper is not permitted. For arriving at answers you may work in the margins, make some markings or underline in the test booklet itself.
6. The University reserves the right to cancel scores of any candidate who impersonates or uses/adopts other malpractices or uses any unfair means. The examination is conducted under uniform conditions. The University would also follow a procedure to verify the validity of scores of all examinees uniformly. If there is substantial indication that your performance is not genuine, the University may cancel your score.
7. In the event of your qualifying the Entrance Test, the hall ticket should be enclosed with your admission form while submitting it to the University for seeking admission in Management Programme along with your testimonials and programme fee. Admission forms received without hall ticket in original will be summarily rejected.

**TEST I**  
**GENERAL AWARENESS**

1. The book 'A Passage to India' was written by
  - (1) Nirad C. Chaudhuri
  - (2) L.K. Advani
  - (3) E.M. Forster
  - (4) Ernest Hemingway
  
2. The internationally renowned business school INSEAD has its main campus in which country ?
  - (1) Australia
  - (2) France
  - (3) U.K.
  - (4) U.S.A.
  
3. The award winning film 'Chariots of Fire' was directed by
  - (1) Hugh Hudson
  - (2) Ingmar Bergman
  - (3) Bob Fosse
  - (4) Rob Marshall
  
4. First person to win two Nobel Prizes was
  - (1) Laura E. Richards
  - (2) Ralph Bunche
  - (3) Jan Tinbergen
  - (4) Marie Curie
  
5. First human to have walked in the space was
  - (1) Alan B. Shepherd
  - (2) Neil Armstrong
  - (3) Alexei A. Leonov
  - (4) Edward H. White
  
6. What is a Coracle ?
  - (1) A wise man
  - (2) A crow
  - (3) A disease
  - (4) A boat

7. What is the length of the large intestine of an adult human ?
- (1) About 5 feet
  - (2) About 10 feet
  - (3) About 12 feet
  - (4) About 8 feet
8. All IMF shareholders are
- (1) governments
  - (2) corporations
  - (3) Americans
  - (4) in the developing world
9. Which of these is a capital city ?
- (1) Sydney
  - (2) Geneva
  - (3) Berne
  - (4) Montreal
10. The first Chief Justice of the Supreme Court of India was
- (1) S.R. Das
  - (2) Harilal Kania
  - (3) S.M. Sikri
  - (4) A.N. Ray
11. Swatch group is the world's largest
- (1) pen maker
  - (2) shoe maker
  - (3) perfume maker
  - (4) watch maker
12. What does the name 'Gangtok' mean ?
- (1) Calm
  - (2) Hill summit
  - (3) Camp
  - (4) Hill spring

13. Lucknow is situated on the banks of river
- (1) Gomti
  - (2) Yamuna
  - (3) Ganga
  - (4) Mahanadi
14. Which of the following is the world's biggest bullion producing country ?
- (1) India
  - (2) China
  - (3) Turkey
  - (4) South Africa
15. The epic poem 'The Light of Asia' is about
- (1) Tagore
  - (2) Gandhiji
  - (3) Buddha
  - (4) Dalai Lama
16. In which business is 'Prada' a big name ?
- (1) Fashion
  - (2) Fast-food
  - (3) Shipping
  - (4) Diamond
17. Who is the only Indian President to have been elected unopposed ?
- (1) Zail Singh
  - (2) N. Sanjiva Reddy
  - (3) V.V. Giri
  - (4) S. Radhakrishnan
18. The headquarters of the Central Wool Development Board, are located in
- (1) Surat
  - (2) Jaipur
  - (3) Rajkot
  - (4) Jodhpur
19. What is Indian Paintbrush ?
- (1) A brush
  - (2) A jungle
  - (3) A plant
  - (4) A toothbrush

20. There are no traffic lights in
- (1) Bhutan
  - (2) Ethiopia
  - (3) Italy
  - (4) Eritrea
21. Who was the French Open Men's Singles Champion from 1978 to 1981 ?
- (1) Pete Sampras
  - (2) Andre Agassi
  - (3) Boris Becker
  - (4) Bjorn Borg
22. Which is the largest planet in our solar system ?
- (1) Earth
  - (2) Jupiter
  - (3) Neptune
  - (4) Venus
23. Which of the following countries has the distinction of having the first woman Prime Minister ?
- (1) India
  - (2) Israel
  - (3) Sri Lanka
  - (4) U.K.
24. The cushion of a billiard table is called
- (1) bank
  - (2) shoe
  - (3) pad
  - (4) velvet
25. Finger spelling is used by the
- (1) coastguards
  - (2) army
  - (3) blind
  - (4) deaf and dumb

26. Backgammon is a
- (1) spice
  - (2) colour
  - (3) game
  - (4) snake
27. The number of countries that participated in the First Asian Games was
- (1) 10
  - (2) 11
  - (3) 12
  - (4) 13
28. 'Blue Lady' refers to
- (1) Norwegian ship
  - (2) James Bond
  - (3) Supreme Court
  - (4) IBM computer
29. Chihuahua is
- (1) a river in Cameroon
  - (2) a large bear
  - (3) an ornamental cabinet
  - (4) a very small dog
30. How many hours is Indian Standard Time ahead of GMT ?
- (1)  $4\frac{1}{2}$  hours
  - (2) 4 hours
  - (3)  $5\frac{1}{2}$  hours
  - (4) 6 hours



## TEST II

### ENGLISH LANGUAGE

**Directions for Questions No. 31 to 40 :** *There are two passages followed by questions based on the contents of the passages. Answer all the questions following each passage on the basis of what is stated or implied in the passage.*

#### Passage I

Although it is now possible to bring most high blood pressure under control, the causes of essential hypertension remain elusive. Understanding how hypertension begins is at least partly a problem of understanding when in life it begins, and this may be very early — perhaps within the first few months of life. Since the beginning of the century, physicians have been aware that hypertension may run in families, but before the 1970s, studies of the familial aggregation of blood pressure treated only population of 15 years of age or older. Few studies were attempted in younger persons because of a prevailing notion that blood pressure in this age group were difficult to measure and unreliable and because essentially hypertension was widely regarded as a disease of adults.

In 1971, a study of 700 children, ages 2 to 14, used a special blood pressure recorder which minimizes observer error and allows for standardization of blood pressure readings. Before then, it had been well established that the blood pressure of adults aggregates 'familiably', that is, the similarities between the blood pressure of an individual and his siblings are generally too great to be explained by chance. The 1971 study showed that familial clustering was measurable in children as well, suggesting that factors responsible for essential hypertension are acquired in childhood. Additional epidemiological studies demonstrated a clear tendency for the children to retain the same blood pressure patterns, relative to their peers, four year later. Thus, a child with blood pressure higher or lower than the norm will tend to remain a person with higher or lower blood pressure with increasing age.

Meanwhile, other investigators uncovered a complex of physiologic roles — including blood pressure — for a vascular system called the kallikrein-kinin system. Kallikreins are enzymes in the kidney and blood plasma which act on precursors called kininogens to produce vasoactive peptides called kinins. Several different kinins are produced, at least three of which are powerful blood vessel dilators. Apparently, the kallikrein-kinin system normally tends to offset the elevations in arterial pressure that results from the secretion of salt-conserving hormones such as aldosterone on the one hand and from activation of the sympathetic nervous system (which tends to constrict blood vessels) on the other hand.

31. The author is of the opinion that
- (1) blood pressure is a disease of adults
  - (2) the causes of hypertension are not yet known
  - (3) familial history is of little help to diagnose
  - (4) further epidemiological studies have not revealed anything new
32. The origins of hypertension can be traced to
- (1) 15 years of age or older population
  - (2) children of 2 to 14 years only
  - (3) the first few months after birth
  - (4) 40 years and above
33. Before 1970, studies on blood pressure focused on
- (1) the familial aggregation of blood pressure of children under 14 years
  - (2) population of 15 years and older
  - (3) only those who had symptoms of hypertension
  - (4) children of 2 years to 4 years
34. A study of 700 children, ages 2 to 14 established that
- (1) blood pressure of children cannot be reliably measured
  - (2) the similarities between the blood pressure of an individual and his siblings are insignificant
  - (3) factors responsible for hypertension are acquired in later life of a child
  - (4) if a child has blood pressure higher or lower than the norm, the child is likely to retain the same tendency with increasing age
35. The author of the passage tries to prove that
- (1) studies on hypertension do not help much
  - (2) with increasing scientific studies our notions about blood pressure and its causes must change
  - (3) familial factors are the only clues to understand the causes of hypertension
  - (4) Kallikrein-kinin system cannot be held responsible for the change in the blood pressure

## Passage II

It would be enormously convenient to have a single, generally accepted index of the economic and social welfare of the people of a given country. A glance at it would tell us how much better or worse off we had become each year, and we would judge the desirability of any proposed action by asking whether it would raise or lower this index. Some recent discussion implies that such an index could be constructed. Articles in the popular press even criticize the Gross National Production (GNP) because it is not such a complete index of welfare, ignoring, on the one hand, that it was never intended to be, and suggesting, on the other, that with appropriate changes it could be converted into one.

The output available to satisfy our wants and needs is one important determinant of welfare. Whatever want, need, or social problem engages our attention, we ordinarily can more easily find resources to deal with it when output is large and growing than when it is not. GNP measures output fairly well, but to evaluate welfare we would need additional measures which would be far more difficult to construct. We would need an index of real costs incurred in production, because we are better off if we get the same output at less cost. Use of just man-hours for welfare evaluation would unreasonably imply that to increase total hours by raising the hours of eight women from 60 to 65 a week imposes no more burden than raising the hours of eight men from 40 to 45 a week, or even than hiring one involuntarily unemployed person for 40 hours a week. A measure of real costs of labour would also have to consider working conditions. Most of us spend almost half of our waking hours on the job and our welfare is vitally affected by the circumstances in which we spend those hours.

To measure welfare, we would need a measure of changes in the needs our output must satisfy. One aspect, population change, is now handled by converting output to a per capita basis on the assumption that, other things being equal, twice as many people need twice as many goods and services to be equally well off. But an index of needs would also account for differences in the requirements for living as the population becomes more urbanized and suburbanized; for the changes in national defense requirements; and for changes in the effect of weather on our needs. The index would have to tell us the cost of meeting our needs in a base year compared with the cost of meeting them equally well under the circumstances prevailing in every other year.

Measures of "needs" shade into measures of the human and physical environment in which we live. We all are enormously affected by the people around us. Can we go where we like without fear of attack? We are also affected by the physical environment — purity

of water and air, accessibility of open green spaces and other conditions. To measure this requires accurate data, but such data are generally deficient. Moreover, weighting is required : to combine robberies and murders in a crime index; to combine pollution of lakes and rivers into a water pollution index : and then to combine crime and water pollution into some general index. But there is no basis for weighting these beyond individual preference. There are further problems. To measure welfare we would need an index of the "goodness" of the distribution of income. There is surely consensus that given the same total income and output, a distribution with fewer families in poverty would be better, but what is the ideal distribution ? Even if we could construct indexes of output, real costs, needs, state of the environment, we would not compute a welfare index because we have no system of weights to combine them.

**36.** The author is of the opinion that

- (1) a single index of the economic and social welfare is never possible
- (2) a single index can be constructed
- (3) GNP is not at all a useful index
- (4) GNP does not measure the output well

**37.** Man-hours cannot be an appropriate measure of real cost because it

- (1) does not take into account the output
- (2) leads to mechanical increase in the working hours
- (3) ignores the working conditions
- (4) cannot indicate the individual output of the workers

**38.** According to the author of the passage, an index to measure welfare must

- (1) measure the changes in the needs that the output must satisfy
- (2) consider the population growth only
- (3) deal with increasing urbanisation
- (4) predict the cost of meeting our future needs

39. We are unable to construct a welfare index because
- (1) there is no reliable data available
  - (2) there is an overemphasis on weather and man-hours
  - (3) there is no system of weights to combine the indexes of output, real costs, needs, state of the environment etc.
  - (4) the policy of the government does not allow it
40. From the passage it becomes evident that
- (1) there is no alternative to GNP to measure welfare
  - (2) there are numerous factors that may not allow computing a single index of measuring welfare
  - (3) there is a need to construct welfare index keeping in view the future
  - (4) Indian conditions defy all indices of welfare

**Directions for Questions No. 41 to 45 :** Each of these questions consists of a word in capital letters, followed by four words or phrases. Choose the alternative that is nearly **similar** in meaning to the word in capital letters in each case.

41. ABJECT

- |               |               |
|---------------|---------------|
| (1) protest   | (2) aim       |
| (3) miserable | (4) perpetual |

42. ASININE

- |               |              |
|---------------|--------------|
| (1) ashamed   | (2) stupid   |
| (3) one sided | (4) stubborn |

43. BIGOTRY

- |               |                           |
|---------------|---------------------------|
| (1) prejudice | (2) religious intolerance |
| (3) racial    | (4) bias                  |

44. DIATRIBE

- |                              |                         |
|------------------------------|-------------------------|
| (1) strong rebuttal          | (2) instructional       |
| (3) a forceful verbal attack | (4) a different opinion |

45. DIALECTICS

- (1) the method of investigating the truth of opinions
- (2) scholarly debates
- (3) counter arguments
- (4) logical rejection

**Directions for Questions No. 46 to 50 :** Each of these questions consists of a word in capital letters, followed by four words or phrases. Choose the alternative that is most nearly **opposite** in meaning to the word in capital letters in each case.

**46. AMITY**

- |             |                |
|-------------|----------------|
| (1) wealthy | (2) compassion |
| (3) enmity  | (4) friendship |

**47. BLASPHEMY**

- |                  |              |
|------------------|--------------|
| (1) strong faith | (2) critical |
| (3) denial       | (4) obedient |

**48. DESPOT**

- |              |              |
|--------------|--------------|
| (1) dictator | (2) autocrat |
| (3) tyrant   | (4) democrat |

**49. ELOQUENT**

- |               |                   |
|---------------|-------------------|
| (1) talkative | (2) argumentative |
| (3) dumb      | (4) quarrelsome   |

**50. INDIGENOUS**

- |              |              |
|--------------|--------------|
| (1) natural  | (2) alien    |
| (3) relative | (4) marginal |

**Directions for Questions No. 51 to 60 :** Each of these questions consists of a sentence with four parts underlined. Select the part which is not appropriate as per standard written English.

51. This summer had been extremely hot inspite of frequent rains that we have been receiving  
(1) (2) (3) (4)  
for the past three summer months.

52. Even since the US declared war against Iraq in April 2003, there has been numerous bomb  
(1) (2) (3)  
blasts in Iraq, killing at least fifty civilians every week.  
(4)

53. If only the leaders had listened to the voices of wise persons, there was not a need to start major wars that took the lives of millions of people and destroyed much wealth and environment in the last century.
54. Corruption grows in leaps and bounds when not only the authorities but also media keeping silent.
55. When the king lost his senses, the soldiers also lost their discipline but the Minister remained unconcerned and did not advice the king.
56. It is a matter of shame that the upright were punished and the guilty was spared because of the dithering leadership.
57. Teachers, as much as the parents, should also care for the character of children because the children has no other immediate guides to guide them rightly.
58. A recent survey has shown that crop failure is more due to wrong use of fertilisers than the poor monsoon or irrigation as we usually believe.
59. She was stunningly beautiful in a simple dress and without ornaments but her neighbours thought that she pretending to be simple as she had put all the jewellery in the locker.
60. The Chairman was so upset with the meeting because of the poor response from the members that he cancelled it in five minutes and the members looking at each other in shock.

**Directions for Questions No. 61 to 65 :** In each of these questions, a related pair of words in capital letters is followed by four alternative pairs of words. Select the pair that best expresses a relationship **similar** to that expressed by the pair in capital letters.

**61. SEEPAGE : DRIPPING**

- (1) percolate : evaporate
- (2) wet : hot
- (3) neat : unclean
- (4) sweep : litter

**62. INSPIRATION : PERSPIRATION**

- (1) dream : lose
- (2) hard work : success
- (3) windfall : lucky draw
- (4) leader : gangster

**63. LOVE : LUST**

- (1) mercy : cruelty
- (2) clever : cunning
- (3) early : soon
- (4) look : behold

**64. SILVER : GOLD**

- (1) stone : clay
- (2) lime : iron
- (3) rubber : gum
- (4) emerald : diamond

**65. SIMILE : METAPHOR**

- (1) style : diction
- (2) fury : fuse
- (3) black : cloud
- (4) cock : goat



**Directions for Questions No. 66 to 70 :** Each of these questions consists of a sentence followed by four alternatives. Select the alternative that conveys the same meaning as the sentence in the question.

- 66.** After the Cuban Revolution in 1959 Che Guevara served as a Minister in Fidel Castro's Government for a brief while but later requested to be relieved in order to work for the revolution in Bolivia.
- (1) Che Guevara and Fidel Castro took part in the Cuban Revolution
  - (2) Castro wanted Che to leave for Bolivia
  - (3) Che did not want to leave Cuba
  - (4) Bolivia was the motherland of Che
- 67.** A bird in hand is worth two in the bush.
- (1) One bird is better than two
  - (2) Be happy with what you have than what you wish to have
  - (3) We should always plan to catch more birds
  - (4) Bird catching is prevented by law
- 68.** The question was too difficult and complex for the students of Eighth class.
- (1) The students were not intelligent enough to answer the question
  - (2) The question was much above the standard of the students
  - (3) The question was set to fail the students in the examination
  - (4) The question was not properly explained
- 69.** In another two months Raju will be completing five years of his special assignment abroad.
- (1) Raju went abroad five years ago
  - (2) The assignment was for four years and ten months
  - (3) Raju does not want to continue his job after two months
  - (4) Raju has two more months to complete his special assignment abroad
- 70.** Shanti was wild at hearing the sarcastic remark by Nandini
- (1) Nandini is known for her sarcastic comments
  - (2) Shanti never liked Nandini
  - (3) Nandini's remark made Shanti angry
  - (4) Shanti and Nandini were not good friends

**Directions for Questions No. 71 to 75 :** Each of these questions consists of a sentence with one or more blanks followed by four alternatives. Select the word or set of words that best fit the meaning of the sentence as a whole.

71. The atmosphere became so \_\_\_\_\_ that it was impossible for any one to speak with \_\_\_\_\_ .  
(1) difficult, sense  
(2) acrimonious, reason  
(3) humid, cool  
(4) unhealthy, normal
72. The problem was not in the \_\_\_\_\_ that were raised but in the \_\_\_\_\_ in which they were tackled by the chief.  
(1) matter, words  
(2) language, style  
(3) issues, manner  
(4) time, promptness
73. You cannot expect people to be \_\_\_\_\_ at the time of crisis when they have very little to \_\_\_\_\_ for themselves.  
(1) generous, fend  
(2) careful, gain  
(3) selfish, spare  
(4) friendly, leave
74. She suffered a lot because of the \_\_\_\_\_ by her boss, but she was \_\_\_\_\_ to carry on with her work.  
(1) goodness, unable  
(2) ill-treatment, determined  
(3) intelligence, scared  
(4) motivation, encouraged
75. There is always a \_\_\_\_\_ to solve intricate problems, if people involved really \_\_\_\_\_ .  
(1) best way, need it  
(2) way, wish to  
(3) solution, agree  
(4) short cut, refuse

**Directions for Questions No. 76 to 80 :** Each of these questions consists of a phrase which is a definition followed by four alternatives. Select the one which best fits the definition in each case.

**76.** A person who is fond of overeating.

- (1) Greedy
- (2) Beggar
- (3) Glutton
- (4) Uncouth

**77.** Discrimination on the basis of the colour of the people.

- (1) Racism
- (2) Chauvinism
- (3) Parochialism
- (4) Regionalism

**78.** Love for finer things in life such as music, art, literature etc.

- (1) Philistine
- (2) Beautician
- (3) Aesthetician
- (4) Sophist

**79.** Mass migration of people from one place to another because of fear of something.

- (1) Exodus
- (2) Emigration
- (3) Refuge
- (4) Displaement

**80.** Making fun of people or leaders through unusual use of language.

- (1) Irony
- (2) Satire
- (3) Invective
- (4) Eulogy

**TEST III**  
**QUANTITATIVE APTITUDE**

81. How many four-digit numbers are there ?  
(1) 8999 (2) 9000  
(3) 8000 (4) 9999
82. Find the greatest number which divides 615 and 963, leaving the remainder 6 in each case.  
(1) 67 (2) 77  
(3) 87 (4) 97
83. Which of the following numbers is divisible by 4 ?  
(1) 78653234 (2) 98765042  
(3) 24689602 (4) 87941032
84. Find the value of  $8937 \times 648 + 8937 \times 122 + 8937 \times 230$   
(1) 8937000 (2) 893700  
(3) 89370 (4) 8937
85. The smallest of the fractions  $\frac{3}{5}, \frac{2}{3}, \frac{5}{6}, \frac{7}{10}$  is  
(1)  $\frac{2}{3}$  (2)  $\frac{7}{10}$   
(3)  $\frac{3}{5}$  (4)  $\frac{5}{6}$
86.  $13 - (12 - 6 \div 3) = ?$   
(1) 11 (2) 3  
(3)  $\frac{7}{3}$  (4) 7
87. The total weight of a bag containing 13 kg 750 g of potatoes and 8 kg 80 g of tomatoes is 22 kg 200 g. How much is the weight of the empty bag ?  
(1) 3.70 kg (2) 370 g  
(3) 37 g (4) 0.037 kg
88. Mona's father is thrice as old as Mona. After 12 years, his age will be twice that of his daughter. Find their present ages.  
(1) 12, 36 (2) 13, 39  
(3) 14, 42 (4) 15, 45

89. If the cost of 12 pens is Rs. 69 then the cost of 14 such pens is  
 (1) Rs. 82 (2) Rs. 80.50  
 (3) Rs. 86.20 (4) Rs. 82.20
90. If  $5 : 4 :: 35 : x$  then the value of  $x$  is  
 (1) 42 (2) 32  
 (3) 28 (4) 48
91. A square has  
 (1) All sides equal and diagonals unequal  
 (2) All sides equal and diagonals equal  
 (3) All sides unequal and diagonals equal  
 (4) All sides unequal and diagonals unequal
92. The cost of putting a fence around a square field at Rs. 2.50 per metre is Rs. 200. The length of each side of the field is  
 (1) 80 m (2) 40 m  
 (3) 20 m (4) 60 m
93. By selling a coat for Rs. 630, a shopkeeper gains 5%. Find the cost price of the coat.  
 (1) Rs. 590 (2) Rs. 600  
 (3) Rs. 610 (4) Rs. 620
94. In how many years will a sum of Rs. 400 yield an interest of Rs. 112 at 14% per annum ?  
 (1) 3 (2) 4  
 (3) 5 (4) 2
95. Solve  $\frac{x}{3} - \frac{5}{2} = 6$ .  
 (1)  $\frac{33}{2}$  (2)  $\frac{39}{2}$   
 (3)  $\frac{51}{2}$  (4)  $\frac{59}{2}$
96. A tree broke at a point but did not separate. Its top touched the ground at a distance of 5 m from its base. If the point where it broke is at a height of 12 m from the ground, what was the total height of the tree before it broke ?  
 (1) 18 m (2) 25 m  
 (3) 32 m (4) 35 m
97. The capacity of a cuboidal tank is 50000 ltr. Find the breadth of the tank, if its length and depth are respectively 2.5 m and 10 m.  
 (1) 1 m (2) 1.5 m  
 (3) 2 m (4) 2.5 m

98. Find the permutations of letters taken all at a time that can be formed out of the word 'watch' ?

- (1) 20  
(2) 24  
(3) 120  
(4) 124

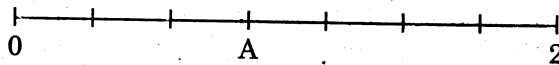
99. After solving  $\frac{10x^2 - 5x + 3}{15x^2 + 10x + 8} = \frac{2x - 1}{3x + 2}$ , what value of x will you get ?

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

100. Simplify  $3\sqrt{\frac{2}{3}} + \frac{1}{\sqrt{6}} - \frac{1}{2}\sqrt{\frac{98}{3}}$

- (1) 0  
(2) 1  
(3) 2  
(4) 3

101. A number line from 0 to 2 is divided into seven equal segments. What fraction names point A ?

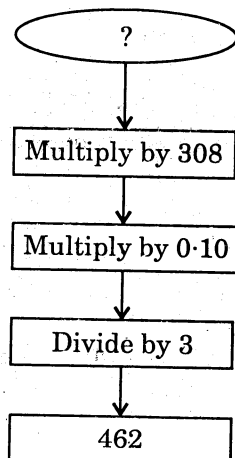


- (1)  $\frac{3}{7}$   
(2)  $\frac{4}{7}$   
(3)  $\frac{5}{7}$   
(4)  $\frac{6}{7}$

102. Dennis the Menace is thinking of two numbers. Their greatest common factor is 6. Their least common multiple is 36. One of the numbers is 12. What is the other number ?

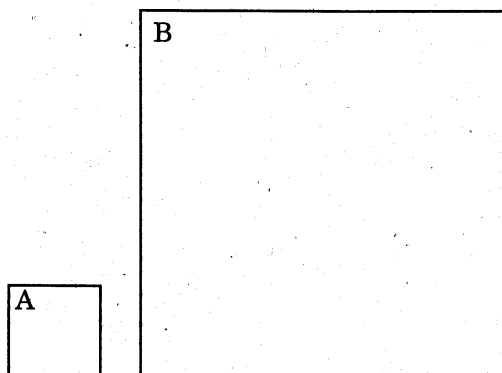
- (1) 12  
(2) 18  
(3) 24  
(4) 30

103. What is the number you started with ?

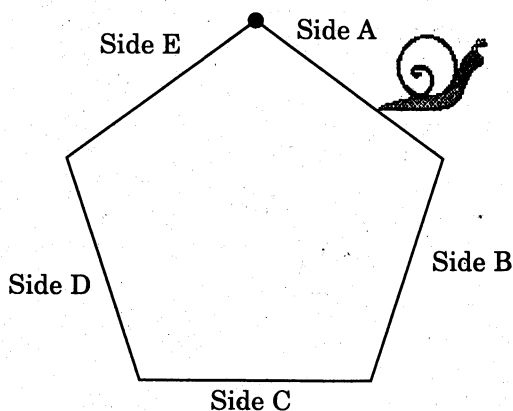


- (1) 25  
(2) 35  
(3) 45  
(4) 55

104. A side of square B is four times the length of a side of square A. How many times greater is the area of square B than the area of square A ?



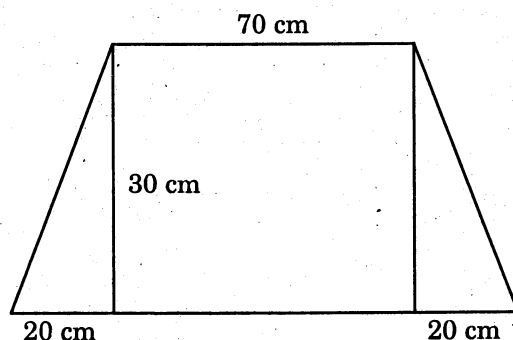
- (1) 16 times greater                      (2) 8 times greater  
(3) 16 times lesser                      (4) 8 times lesser
105. A snail started at the dot. What side will he be on when he has crawled  $\frac{13}{20}$  of the distance around the regular pentagon of equal sides ?



- (1) A                      (2) B  
(3) C                      (4) D
106. The number of hours that were left in the day was one-third of the number of hours already passed. How many hours were left in the day ?
- (1) 6 hours                      (2) 9 hours  
(3) 12 hours                      (4) 3 hours
107. The magician said, "The average of seven numbers is 49. If 1 is added to the first number, 2 is added to the second number, 3 is added to the third number and so on up to the seventh number", what is the new average ?

- (1) 52                      (2) 53  
(3) 54                      (4) 55

108. A carpenter decided to design desk-tops for students at the Junior High. The dimensions of the desk-top are as shown. How much wood would they need for 30 desk-tops ? (in  $\text{cm}^2$ )



- (1)  $18000 \text{ cm}^2$  of wood                      (2)  $21000 \text{ cm}^2$  of wood  
(3)  $27000 \text{ cm}^2$  of wood                      (4)  $81000 \text{ cm}^2$  of wood
109. A family was going to buy a television set for Rs. 5,800. The dealer offered the family two options for buying the television set. They could pay the full amount in cash, or they could pay Rs. 1,000 down and Rs. 230 a month for 24 months on the instalment plan. How much more would they pay for the television set on the instalment plan ?
- (1) Rs. 360                                              (2) Rs. 720  
(3) Rs. 1,020                                              (4) Rs. 13,600
110. Lisa Lilly was the best runner in the eighth grade. One day she ran 100 m in 40 seconds, 200 m in 1 minute and 10 seconds, and 200 m over low hurdles in one and a half minutes. How many more seconds did it take her to run the 200 m over low hurdles than it did to run the 200 m dash ?
- (1) 15 s                                                      (2) 18 s  
(3) 20 s                                                      (4) 24 s
111. Which of the following numbers is greater than  $\frac{1}{2}$  and less than  $\frac{3}{5}$  ?
- (1)  $\frac{9}{19}$                                                       (2) 50%  
(3)  $\frac{1}{\sqrt{2}}$                                                       (4)  $\frac{\sqrt{5}}{4}$
112. A's share in a partnership is Rs. 1,000 more than B's, but A's capital is invested for 8 months while B's is for 12 months. If A's share of the yearly profits is the same as that of B, what is A's capital ?
- (1) Rs. 1,500                                              (2) Rs. 2,000  
(3) Rs. 3,000                                              (4) Rs. 4,000



113. The average age of A and B is 20 years. If C were to replace A, the average would be 19 and if he were to replace B, the average would be 21. What are the ages of A, B and C ?

- (1) 18, 20, 22 (2) 18, 22, 20  
(3) 22, 20, 18 (4) 22, 18, 20

114. If the difference between 15% loss and 15% gain is Rs. 450, what is the cost price ?

- (1) Rs. 1,200 (2) Rs. 1,500  
(3) Rs. 2,000 (4) Rs. 2,200

115. A train 55 metres long passes a railway platform 220 metres long in 10 seconds. How many seconds will it take to pass a telegraph pole ?

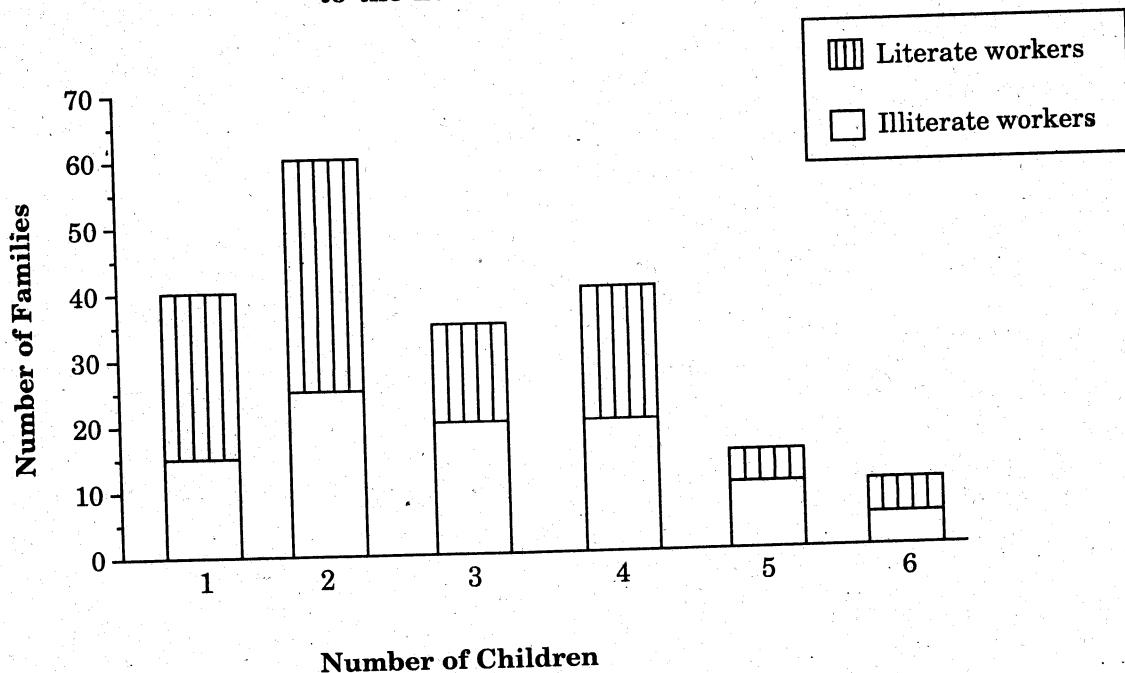
- (1) 1 (2) 1.25  
(3) 1.5 (4) 2

116.  $\frac{3}{3 + \frac{0.3 - 3.03}{3 \times 0.91}} = ?$

- (1) 1.5 (2) 1.75  
(3) 0.5 (4) 7.5

**Direction :** Questions 117 to 124 are based on the data presented graphically in the histogram below.

**Frequency distribution of workers in a factory according to the number of children they have**



117. The total number of workers in the factory is
- (1) 100 (2) 150  
(3) 200 (4) 210
118. The total number of children that all the workers have between them is
- (1) 520 (2) 560  
(3) 600 (4) 640
119. The total number of literate workers is
- (1) 95 (2) 100  
(3) 105 (4) 110
120. The ratio of literates : illiterates is
- (1) 1 : 1 (2) 21 : 20  
(3) 20 : 21 (4) 21 : 19
121. The number of literate workers with at least 3 children is
- (1) 35 (2) 40  
(3) 45 (4) 50
122. The number of illiterate workers with less than 4 children is
- (1) 45 (2) 50  
(3) 80 (4) 60
123. The ratio of literate workers to illiterate workers who have only 3 children is
- (1) 2 : 3 (2) 3 : 2  
(3) 3 : 4 (4) 1 : 3
124. Which of the following statements is/are true ?
- (1) Literate workers have smaller families than illiterate workers  
(2) Families with 2 or less than 2 children are commoner than families with 3 or more children  
(3) More the number of children a worker has, the more literate he is  
(4) None of the above

125. If the diameter of a circle is doubled, the area is

- (1) halved
- (2) doubled
- (3) quadrupled
- (4) trebled

126. The percentage increase in the surface area of a cube when each side is doubled is

- (1) 25
- (2) 50
- (3) 100
- (4) 300

127. A table costs Rs. 75 after a discount of 40%. What was the original price ?

- (1) Rs. 105
- (2) Rs. 115
- (3) Rs. 125
- (4) Rs. 100

128. In what proportion should one variety of oil at Rs. 9.50 a kg be mixed with another at Rs. 10 a kg to get a mixture worth Rs. 9.60 a kg ?

- (1) 1 : 4
- (2) 10 : 4
- (3) 4 : 1
- (4) 2 : 1

129.  $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}} = ?$

- (1)  $5 + 2\sqrt{6}$
- (2)  $\frac{5 + 2\sqrt{6}}{5}$
- (3)  $5 - 2\sqrt{6}$
- (4)  $\frac{5 - 2\sqrt{6}}{5}$

130. The great Indian mathematician S. Ramanujam once remarked to his friend Hardy : "Your car number 1729 is unique. It is the smallest number which can be expressed as the sum of the cubes of two different sets of numbers." If one set is  $10^3 + 9^3$ , what is the other set ?

- (1) 1, 12
- (2) 4, 11
- (3) 2, 12
- (4) 4, 13

## TEST IV REASONING

**Directions :** In questions 131 to 137, the relationship is to be deciphered, utilising the given relationship.

- 131.** Paddy is related to Field in the same way as Steel is related to  
(1) Factory (2) Iron  
(3) Ore (4) Wagon
- 132.** 'Fruit' is to Banana as Mammal is to  
(1) Cow (2) Snake  
(3) Fish (4) Sparrow
- 133.** Good is to Bad as Virtue is to  
(1) Blame (2) Fault  
(3) Despair (4) Success
- 134.** Fatigue is to Exertion as Wear is to  
(1) Use (2) Age  
(3) Wastage (4) Clothes
- 135.** Dam is to Mad as Drab is to  
(1) Barb (2) Brab  
(3) Bard (4) Badr
- 136.** Paw is to Cat as Hoof is to  
(1) Horse (2) Lamb  
(3) Elephant (4) Lion
- 137.** Braille is related to Blindness in the same way as 'Sign Language' is related to  
(1) Exceptional (2) Touch  
(3) Deafness (4) Presentation
- 138.** aabbabba : YYZZZYZZY :: aabbabba : ?  
(1) YZZYYZZY (2) ZYZZYYZY  
(3) ZZYZZYYZ (4) ZYZYYZZY

139. ACDE : Oghi :: ESTU : ?

(1) ABCD

(2) EPQU

(3) Xyze

(4) HKGO

140. TOMATO : MTOOTA :: 123412 : ?

(1) 312214

(2) 123456

(3) 321124

(4) 213314

141. ABCD : WXYZ :: EFGH : ?

(1) STOU

(2) STUV

(3) STOP

(4) STUE

142. ZA : YB :: XC : ?

(1) NM

(2) OP

(3) WD

(4) YZ

**Directions :** In questions 143 to 147, a pair of words is given to express a certain relationship. Select a suitable pair from the given options to express the similar relationship.

143. Cells : Cytology

(1) Disease : Physiology

(2) Worms : Orinthology

(3) Insects : Entomology

(4) Tissues : Morphology

144. Pigeon : Peace

(1) Crown : Head

(2) White Flag : Surrender

(3) Laurels : Victory

(4) War : Liberty

145. Liquor : Drink

(1) Clothes : Beauty

(2) Snuff : Inhale

(3) Bread : Jam

(4) Tea : Beverage

146. Coconut : Shell

(1) Stamp : Postage

(2) Nut : Crake

(3) Skia : Rod

(4) Letter : Envelope

147. Artists : Troupe

(1) Captain : Team

(2) Market : Crowd

(3) Fishes : Pond

(4) Cattle : Herd

**Direction :** In each of questions 148 to 156, there are four words. Three of them are alike in a certain way. Select the word which is different.

148. (1) Astounded (2) Flabbergasted  
(3) Pleased (4) Astonished
149. (1) Mist (2) Rain  
(3) Vapour (4) Cloud
150. (1) Wheat (2) Paddy  
(3) Jowar (4) Mustard
151. (1) Train (2) Wheat  
(3) Driver (4) Pilot
152. (1) Dog Show (2) Fashion Show  
(3) Fun Fair (4) Painting Exhibition
153. (1) Stone (2) Marble  
(3) Granite (4) Sandstone
154. (1) Bird (2) Cuckoo  
(3) Nightingale (4) Pigeon
155. (1) Ride (2) Swim  
(3) Sail (4) Dive
156. (1) Swan (2) Eagle  
(3) Ostrich (4) Peacock

**Directions :** In questions 157 to 160, three of the four are alike and so form a group. Which is the one that does not belong to that group ?

157. (1) 53 (2) 73  
(3) 43 (4) 63
158. (1) 383 (2) 427  
(3) 671 (4) 473
159. (1) 3249 (2) 2709  
(3) 8314 (4) 1315
160. (1) 6589 (2) 4323  
(3) 2341 (4) 9673

**Directions :** In questions 161 to 164, which one pair is different from the rest three ?

161. (1)  $49 - 7$  (2)  $36 - 9$   
(3)  $64 - 8$  (4)  $121 - 11$
162. (1) (13, 39) (2) (21, 15)  
(3) (24, 48) (4) (81, 63)
163. (1)  $25 - 17$  (2)  $58 - 50$   
(3)  $49 - 42$  (4)  $83 - 75$
164. (1)  $13 - 156$  (2)  $12 - 144$   
(3)  $15 - 180$  (4)  $16 - 176$
165. Which one is like Cone, Prism and Cube ?  
(1) Triangle (2) Cuboid  
(3) Circle (4) Rectangle
166. Which one is like Jam, Jelly and Pickle ?  
(1) Grapes (2) Preserves  
(3) Marmalade (4) Butter
167. Which one is like Bleat, Bray and Grunt ?  
(1) Cry (2) Scream  
(3) Croak (4) Bark

168. Which one is like Dozen, Score and Decade ?

- |              |                 |
|--------------|-----------------|
| (1) Number   | (2) Measurement |
| (3) Counting | (4) Century     |

169. Insert the two missing numbers :

6 9 18 21 42 45    ?    ?

- |            |            |
|------------|------------|
| (1) 90, 93 | (2) 42, 45 |
| (3) 80, 85 | (4) 90, 84 |

170. Insert the missing number.

|   |          |    |
|---|----------|----|
| 7 | 16       | 9  |
| 5 | 21       | 16 |
| 9 | <u>?</u> | 4  |

- |        |        |
|--------|--------|
| (1) 26 | (2) 13 |
| (3) 18 | (4) 7  |

171. Insert the missing number.

16 15 17 14    ?

- |        |        |
|--------|--------|
| (1) 20 | (2) 18 |
| (3) 34 | (4) 28 |

172. Insert the missing numbers to complete the series :

0 2 6 12 20    ?    ?

- |            |            |
|------------|------------|
| (1) 25, 28 | (2) 30, 41 |
| (3) 30, 42 | (4) 30, 45 |

173. Insert the missing number

|   |   |          |    |
|---|---|----------|----|
| 4 | 6 | 3        | 8  |
| 2 | 8 | 4        | 4  |
| 6 | 5 | <u>?</u> | 10 |

- |       |       |
|-------|-------|
| (1) 8 | (2) 6 |
| (3) 3 | (4) 4 |



174. Find the odd-man out.

- |        |        |
|--------|--------|
| (1) 9  | (2) 25 |
| (3) 36 | (4) 78 |

175. Spot the unwanted guest.

- |         |         |
|---------|---------|
| (1) 246 | (2) 369 |
| (3) 123 | (4) 284 |

176. If  $a * b = a^3 + b^3 - a^2b^2$ , what is the value of  $(1*2)*3$  ?

- |        |          |
|--------|----------|
| (1) 73 | (2) - 73 |
| (3) 37 | (4) - 37 |

177. Square root of 0.0025 is

- |         |             |
|---------|-------------|
| (1) 625 | (2) 0.00625 |
| (3) 0.5 | (4) 0.05    |

178. The value of  $36 \div 2 \div 3 \div 4$  is

- |                    |                     |
|--------------------|---------------------|
| (1) $\frac{1}{2}$  | (2) 6               |
| (3) $1\frac{1}{2}$ | (4) $12\frac{1}{2}$ |

179. 50 kg is what fraction of a metric ton ?

- |                    |                    |
|--------------------|--------------------|
| (1) $\frac{1}{2}$  | (2) $\frac{1}{10}$ |
| (3) $\frac{1}{20}$ | (4) $\frac{1}{40}$ |

180. When 75% of a number is added to 75, the result is the number again. The number is

- |         |         |
|---------|---------|
| (1) 150 | (2) 300 |
| (3) 360 | (4) 450 |

181. Divide Rs. 391 into three parts proportional to the fractions

$$\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$$

- |               |               |
|---------------|---------------|
| (1) 6 : 8 : 9 | (2) 8 : 6 : 9 |
| (3) 9 : 8 : 6 | (4) 3 : 4 : 5 |

182. Two sums of money are proportional to 8 : 9. If the first is Rs. 20/-, the other is
- (1) Rs. 22.50 (2) Rs. 18.50  
(3) Rs. 17.50 (4) Rs. 25.20
183. If 4 chickens are worth 3 ducks, 7 ducks worth 2 geese, and 9 geese worth 7 fowls, what is the price of a chicken when a fowl costs Rs. 150/- ?
- (1) Rs. 75 (2) Rs. 25  
(3) Rs. 50 (4) Rs. 150
184. Two numbers are in the ratio of 5 : 8. If 12 be added to each they are in the ratio of 3 : 4. Find the numbers.
- (1) 15, 24 (2) 24, 15  
(3) 20, 32 (4) 25, 40
185. A father wishes to divide his salary in three parts A, B and C so that  
A's share : B's share = 2 : 3 and B's share : C's share = 4 : 5. What is B's share ?
- (1) Rs. 62 (2) Rs. 48  
(3) Rs. 72 (4) Rs. 90

**Directions (Q. 186 – 189) :** Read the following information carefully and answer the questions given below it.

Six boys A, B, C, D, E and F are marching in a line. They are arranged according to their height, the tallest one being at the back, and the shortest in front.

F is between B and A.

E is shorter than D but taller than C, who is taller than A.

E and F have two boys between them.

A is not shortest among them all.

186. Where is E ?
- (1) Between A and B (2) Between C and A  
(3) Between D and C (4) In front of C
187. Who is the tallest ?
- (1) B (2) D  
(3) F (4) A
188. If we start counting from the shortest, which boy is fourth in the line ?
- (1) E (2) A  
(3) D (4) C
189. Who is the shortest ?
- (1) C (2) D  
(3) B (4) F

**Directions (Q. 190 – 194) :** Read the following information and answer the questions given below it.

An ironsmith has five iron articles P, Q, R, S and T.

- I. P weighs double that of Q.
- II. Q weighs four and a half times of R.
- III. R weighs half that of T.
- IV. T weighs less than P but more than R; S is heavier than R.

**190.** Which one is the lightest of all ?

- (1) P
- (2) Q
- (3) R
- (4) S

**191.** T is lighter than which pair of objects ?

- (1) P, Q
- (2) S, R
- (3) P, R
- (4) S, Q

**192.** T is heavier than which pair of objects ?

- (1) S, Q
- (2) S, R
- (3) P, R
- (4) P, Q

**193.** Which one of the following is the heaviest ?

- (1) P
- (2) Q
- (3) R
- (4) S

**194.** What is the descending order of their weights ?

- (1) PQTSR
- (2) QSTPR
- (3) RPSQT
- (4) PQSTR

**Directions (Q. 195 – 198) :** Read the following information carefully to answer these questions.

A sample poll of 200 votes revealed the following information concerning three candidates A, B and C who are running for three different offices.

28 in favour of both A and B

98 in favour of A or B, but not C

42 in favour of B but not A or C

122 in favour of B or C but not A

64 in favour of C but not A or B

14 in favour of A and C but not B

**195.** How many voters were in favour of all the three candidates ?

- |        |        |
|--------|--------|
| (1) 14 | (2) 8  |
| (3) 20 | (4) 16 |

**196.** How many voters were in favour of C alone ?

- |        |        |
|--------|--------|
| (1) 36 | (2) 42 |
| (3) 64 | (4) 38 |

**197.** How many voters were in favour of A irrespective of B or C ?

- |        |        |
|--------|--------|
| (1) 78 | (2) 64 |
| (3) 42 | (4) 56 |

**198.** How many voters were in favour of only one of the candidates ?

- |         |         |
|---------|---------|
| (1) 58  | (2) 78  |
| (3) 106 | (4) 142 |

**199.** In a certain coding system ETTPI stands for Apple. What is the code for 'DELHI' ?

- |           |           |
|-----------|-----------|
| (1) CQMNP | (2) HIPLM |
| (3) PMULM | (4) CQPMN |

**200.** Rohit is as much younger to Neelu as he is older to Prince. If the sum of ages of Neelu and Prince is 48 years, how old is Rohit ?

- |              |              |
|--------------|--------------|
| (1) 20 years | (2) 24 years |
| (3) 28 years | (4) 32 years |

## **SPACE FOR ROUGH WORK**

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