OPENMAT (XX) Entrance Test for Management Programmes 2006

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. Candidates should bring their hall tickets duly affixed with their latest photograph to appear in the test. The photograph should be attested by a Gazetted Officer, failing which you will not be allowed to take the examination. It should be got signed by the Invigilator. In the event of your qualifying the Entrance Test, this 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. "Lay-up shot" is a term associated with which of the following games ?

   (1) Volleyball (2) Throwball

   (3) Basketball (4) Hand Ball

2. Alexander the Great died in 323 B.C. in

   (1) Persia (2) Babylon

   (3) Macedonia (4) Taxila

3. The scientist who was associated with the foodgrain revolution and also won the Nobel Prize for Peace is

   (1) Dr. M.S. Swaminathan
   (2) Dr. N.E. Borlaug
   (3) Dr. S. Chandrashekhar
   (4) Willy Brandt

4. The first Indian ruler who accepted Subsidiary Alliance offered by Lord Wellesley in 1798 was

   (1) Nawab of Oudh
   (2) Nizam of Hyderabad
   (3) Nawab of Carnatic
   (4) King of Mysore

5. Bats can sense obstacles because they produce

   (1) Supersonic sound waves
   (2) Ultrasonic sound waves
   (3) Infrasonic sound waves
   (4) Micro sound waves

6. Which of these is a modified underground stem ?

   (1) Radish
   (2) Carrot
   (3) Sweet potato
   (4) Potato

7. Who has authored the book *'Caesar and Cleopatra'* ?

(1) William Shakespeare
(2) Charles Dickens
(3) George Bernard Shaw
(4) Matthew Arnold

8. Which amendments to the Constitution provide for the reservation of one-third seats in the Municipal Boards and Village Panchayats for women ?

(1) 73^{rd} and 74^{th}
(2) 82^{nd} and 83^{rd}
(3) 72^{nd} and 73^{rd}
(4) 74^{th} and 75^{th}

9. In the electroplating of gold the electrolyte used is

(1) Potassium Aurocyanide
(2) Gold Chloride
(3) Gold Sulphate
(4) Gold Nitrate

10. The food conducting tissue of a plant is

(1) Phloem (2) Xylem
(3) Parenchyma (4) Collenchyma

11. Which of the following was the venue of the Commonwealth Games in 2006 ?

(1) Manchester (2) Edmonton
(3) Hamilton (4) Melbourne

12. In which of the following categories of crops are Rice and Bajra included ?

(1) Rabi (2) Kharif
(3) Zaid (4) Plantation

13. Who was the recipient of David Dixon Award at the Commonwealth Games 2006 ?

(1) Abhinav Bindra
(2) Jeev Milkha Singh
(3) Samresh Jung
(4) Anju Bobby George

14. Who among the following cricketers has been named the 'Leading Cricketer of the World' by 'Wisden' for 2005 ?

(1) Adam Gilchrist

(2) Andrew Flintoff

(3) M.S. Dhoni

(4) Brian Lara

15. The Gupta King, who assumed the title of 'Vikramaditya' was

(1) Skandgupta

(2) Samudragupta

(3) Chandragupta-II

(4) Kumaragupta

16. Radioactivity is caused due to

(1) Unstable Nucleus

(2) Unstable Electronic Configuration

(3) Stable Nucleus

(4) Stable Electronic Configuration

17. When the post of the President and the Vice-President both are vacant, then who among the following officiates as the President ?

(1) The Chief Justice of India

(2) The Prime Minister

(3) The Speaker of the Lok Sabha

(4) Dy. Chairman of the Rajya Sabha

18. The name of the Plastic Polymer from which combs, toys, bowls etc. are made, is

(1) Polyurethane

(2) Polystyrene

(3) Metallic polysulphides

(4) Polysulphide

19. The Delhi Sultan who fell to death while playing Polo, was

(1) Qutubuddin Aibak

(2) Alauddin Khilji

(3) Feroz Shah Tughlaq

(4) Ghiasuddin Tughlaq

20. The surface tension of water, on adding detergent to it

(1) increases

(2) decreases

(3) becomes zero

(4) shows no change

21. In the upper layer of the atmosphere, ozone is formed by

(1) the action of U.V. rays on oxygen

(2) the combination of oxygen molecules

(3) subjecting oxygen to high pressure

(4) the action of nitrogen on oxygen

22. If the Speaker of the Lok Sabha wishes to tender his resignation, then he has to address his letter to

(1) The Leader of the House

(2) The President of India

(3) The Dy. Speaker of the House

(4) The Chairman of the Rajya Sabha

23. Who was the Prime Minister of India when the Anti-Defection Bill was passed ?

(1) I.K. Gujral

(2) H.D. Deve Gowda

(3) V.P. Singh

(4) A.B. Vajpayee

24. Which of the following pairs is ***not*** correctly matched ?

(1) Partition of Bengal — 1905

(2) Foundation of Muslim League — 1906

(3) Surat Split — 1907

(4) Transfer of India's Capital from Calcutta to Delhi — 1909

25. Which organ of the human body breaks down the old RBCs and stores iron from them ?

(1) Kidney (2) Gall bladder

(3) Pancreas (4) Spleen

26. Which of the following has the longest wavelength ?

(1) Ultraviolet radiation

(2) Gamma radiation

(3) Visible radiation

(4) Infrared radiation

27. The book *'Algebra of Infinite Justice'* was written by

(1) M. Chandrashekhar

(2) Nelson Mandela

(3) Arundhati Roy

(4) Aung San Suu Kyi

28. Which of the following types of forests is most widespread in India ?

(1) Mangrove

(2) Thorn scrub

(3) Tropical dry deciduous

(4) Tropical wet evergreen

29. Which of the following days is celebrated as the 'World Environment Day' ?

(1) April 7

(2) May 5

(3) June 5

(4) July 7

30. What was India's percentage share in world exports for the year 2005 ?

(1) 0·4%

(2) 0·6%

(3) 0·8%

(4) 1·0%

TEST II

ENGLISH LANGUAGE

Directions for Questions No. 31 to 45 : *The section consists of two passages followed by questions based on the contents of the passage. Answer all questions following each passage on the basis of what is stated or implied in the passage.*

Passage I

The majority of successful senior managers do not closely follow the classical rational model of first clarifying goals, assessing the problem, formulating options, estimating likelihood of success, making a decision and only then taking action to implement the decision. Rather, in their day to day tactical manoeuvres, these senior executives rely on what is vaguely termed "intuition" to manage a network of interrelated problems that require them to deal with ambiguity, inconsistency, novelty, and surprise; and to integrate action into the process of thinking.

Generations of writers on management have recognized that some practicing managers rely heavily on intuition. In general, however, such writers display a poor grasp of what intuition is. Some see it as the opposite of rationality; others view it as an excuse for capriciousness.

Isenberg's recent research on the cognitive processes of senior managers reveals that managers' intuition is neither of these. Rather, senior managers use intuition in at least five ways. First, they intuitively sense when a problem exists. Second, managers rely on intuition to perform well known behaviour patterns rapidly. Thus intuition is not arbitrary or irrational but is based on years of painstaking practice and hands-on experience that build skills. A third function of intuition is to synthesize isolated bits of data and practice into an integrated picture, often in an "Aha !" experience. Fourth, some managers use intuition as a check on the results of more rational analysis. Most senior executives are familiar with the formal decision analysis models and tools, and those who use such systematic methods for reaching decisions are occasionally leery of solutions suggested by these methods which runs counter to their sense of correct course of action. Finally managers can use intuition to bypass in depth analysis and move rapidly to engender a plausible solution. Used in this way, intuition is an almost instantaneous cognitive process in which a manager recognizes familiar patterns.

One of the implications of the intuitive style of executive management is that "thinking" is inseparable from acting. Since managers often "know" what is right before they can analyze and explain it, they frequently act first and explain later. Analysis is inextricably

tied to action in thinking/acting cycles, in which managers develop thoughts about their companies and organizations not by analyzing a problematic situation and then acting, but by acting and analyzing in close concert.

Given the great uncertainty of many of the management issues that they face, senior managers often instigate a course of action simply to learn more about an issue. They then use the results of the action to develop a more complete understanding of the issue. One implication of thinking/acting cycles is that action is often part of defining the problem, not just implementing the solution.

31. According to the passage, senior managers use intuition in all of the following ways except to

(1) speed up the creation of a solution to a problem

(2) identify a problem

(3) bring together disparate facts

(4) stipulate clear goals

32. The passage suggests which of the following about the 'Writers on management' mentioned in Para 2 ?

(1) They have criticized managers for not following the classical rational model of decision analysis.

(2) They have misunderstood how managers use intuition in making business decisions.

(3) They have not based their analysis on a sufficiently large sample of actual managers.

(4) They have relied in drawing the conclusions on what managers say rather than on what managers do.

33. Which of the following best exemplifies an 'Aha! experience' as it is presented in the passage ?

(1) The manager risks taking an action whose outcome is unpredictable to discover whether the action changes the problem at hand.

(2) A manager performs well-learned and familiar behaviour patterns in creative and uncharacteristic ways to solve a problem.

(3) A manager suddenly connects seemingly unrelated facts and experiences to create a pattern relevant to the problem at hand.

(4) A manager rapidly identifies the methodology used to compile data yielded by systematic analysis.

34. According to the passage, the classical model of decision analysis includes all the following *except* :

(1) evaluation of a problem

(2) creation of a possible solution to a problem

(3) establishment of clear goals to be reached by the decision

(4) action undertaken in order to discover more information about the problem

35. It can be inferred from the passage that which of the following would most probably be one major difference in behaviour between manager X who uses intuition to reach decisions and manager Y who uses only formal decision analysis ?

(1) Manager X analyzes first and then acts; Manager Y does not.

(2) Manager X checks possible solutions to a problem by systematic analysis; Manager Y does not.

(3) Manager X takes action in order to arrive at the solution to a problem; Manager Y does not.

(4) Manager Y draws on years of hands-on experience in creating a solution to a problem; Manager X does not.

36. The passage provides support for which of the following statements ?

(1) Managers who rely on intuition are most successful than those who rely on formal decision analysis.

(2) Managers cannot justify their intuitive decisions.

(3) Inclusion enables managers to employ their practical experience more efficiently.

(4) Logical analysis of a problem increases the number of possible solutions.

37. The word "capriciousness" used in the passage means

(1) Whimsical behaviour

(2) Laziness

(3) Carelessness

(4) Risky behaviour

38. An appropriate title for the passage would be

(1) Rationality and intuition

(2) The intuitive manager

(3) Cognitive processes of managers

(4) Applications of intuition

Passage II

Two recent publications offer different assessments of the career of the famous British nurse Florence Nightingale. A book by Andy Summers seeks to debunk the idealization and present a reality at odds with Nightingale's heroic reputation. According to Summers, Nightingale's importance during the Crimean War has been exaggerated : not until the War's end did she become supervisor of the female nurses. In addition, Summers writes that the contribution of the nurses to the relief of the wounded was at best marginal. The prevailing problems of military medicine were caused by army organizational practices, and the addition offered by few nurses to the medical staff could be no more than symbolic. Nightingale's place in the national pantheon, Summers asserts, is largely due to the propagandistic efforts of contemporary newspaper reporters.

By contrast, the editors of a new volume of Nightingale's letters view Nightingale as a person who significantly influenced not only her own age but also subsequent generations. They highlight her ongoing efforts to reform sanitary conditions after the War. For example, when she learned that peacetime living conditions in British barracks were so horrible that the death rate of enlisted men far exceeded that of neighbouring civilian population, she succeeded in persuading the government to establish a Royal Commission on the Health of the Army. She used sums raised through public contributions to found a nurses training hospital in London. Even in administrative matters, the editors assert, her practical intelligence was formidable : as recently as 1947 the British army's medical services were still using the cost accounting system she had devised in the eighteen sixties.

I believe that the evidence of her letters supports continued respect for Nightingale's brilliance and creativity. When counselling village school masters to encourage children to use their faculties of observation, she sounds like a modern educator. Her insistence on classifying the problems of the needy in order to devise a procreate treatment is similar to the approach of modern social workers. In sum, although Nightingale may not have achieved all of her goals during the Crimean War, her breadth of vision and ability to realize ambitious projects have earned her an eminent place among the ranks of social pioneers.

39. The passage is primarily concerned with evaluating

(1) the importance of Florence Nightingale's innovations in the field of nursing

(2) contrasting approaches to the writing of historical biography

(3) contradictory accounts of Florence Nightingale's historical significance

(4) the quality of health care in nineteenth century England

40. According to the passage, the editors of Nightingale's letters credit her with contributing to which of the following ?

(1) Improvement of the survival rate for soldiers in British army hospitals during the Crimean War.

(2) The development of nurses' training curriculum that was far in advance of its day.

(3) The increase in the number of women doctors practicing in British army hospitals.

(4) The creation of an organization for monitoring the peacetime living conditions of British soldiers.

41. The passage suggests which of the following about Nightingale's relationship with the British public of her day ?

(1) She was highly respected, her projects receiving popular and government support.

(2) She encountered resistance from both the army establishment and the general public.

(3) She was supported by the working classes and opposed by the wealthier classes.

(4) She was supported by the military establishment but had to fight the governmental bureaucracy.

42. The passage suggests which of the following about sanitary conditions in Britain after the Crimean War ?

(1) While not ideal, they were superior to those in other parts of the world.

(2) Compared with conditions before the War, they had deteriorated.

(3) They were far worse in military camps than in the neighbouring civilian population.

(4) They were uniformly crude and unsatisfactory throughout England.

43. With which of the following statements regarding the different interpretations of Nightingale's importance is the author most likely to agree ?

(1) Summers misunderstood both the importance of her achievements during the Crimean War and subsequent to it.

(2) The editors of Nightingale's letters made valid points about her practical achievements, but they still exaggerated her influence on subsequent generations.

(3) Although Summer's account of Nightingale's role in the Crimean War may be accurate, and she ignored evidence of Nightingale's subsequent achievements that suggest her reputation as an eminent social reformer is well deserved.

(4) The editors of Nightingale's letters have propagated the outdated exaggeration of her importance.

44. According to Summers, Nightingale's historical fame is largely due to

(1) her being supervisor of the female nurses

(2) her great service to the cause of the wounded during the Crimean War

(3) the propaganda provided by the print media of the day

(4) her solutions to the prevailing problems of military medicine

45. In the last paragraph, the author is primarily concerned with

(1) summarizing the arguments about Nightingale presented in the first two paragraphs

(2) refuting the view of Nightingale's career presented in the preceding paragraph

(3) analyzing the weakness of the evidence presented elsewhere in the passage

(4) citing evidence to support a view of Nightingale's career

Directions for Questions No. 46 to 50 : *Each of these questions consists of a word in capital letters, followed by four options. Choose the option that is most similar in meaning to the word in capital letters, in each case.*

46. DISTRAIT

(1) clever (2) industrial

(3) absent-minded (4) narrow

47. DROLL

(1) rotund (2) amusing

(3) fearsome (4) strange

48. AVARICE

(1) greed (2) invoice

(3) power (4) statement

49. BALEFUL

(1) doubtful (2) virtual

(3) deadly (4) conventional

50. TENACITY

(1) splendour (2) perseverance

(3) tendency (4) ingratitude

Directions for Questions No. 51 to 55 : *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 the capital letters, in each case.*

51. BIGOTRY

(1) arrogance (2) approval

(3) promptness (4) tolerance

52. ERUDITE

(1) professional (2) ignorant

(3) stately (4) unknown

53. JEOPARDY

(1) safety (2) liberty

(3) patience (4) willingness

54. PAEAN

(1) serf (2) benefaction

(3) lament (4) reflection

55. SUAVITY

(1) ingeniousness (2) rusticity

(3) constancy (4) paucity

Directions for Questions No. 56 to 60 : *Each of these questions consists of a capitalized word followed by four sentences in which the word has been used in different ways. Choose the option in which the usage of the word is incorrect or inappropriate.*

56. BREAK

(1) I was late to school because my car broke down.

(2) I was lucky to break even at the casino last night.

(3) The cowboy worked long and hard to break in the new horse.

(4) She broke through the conversation by hanging up the phone.

57. BRING

(1) Bring up the matter when we have the next meeting.

(2) His investments bring in a profit, and his wife brings in 50,000 rupees a year.

(3) By refusing to listen to his teacher, he brought the failure on himself.

(4) The assassination brought on the First World War.

58. GIVE

(1) The dancers would not give in practicing even though they were exhausted.

(2) We hope there will be some give and take at the conference table.

(3) We often expect the other side to give in.

(4) The town got flooded when the dam gave way.

59. LOOK

(1) Someone has to look after the children while we are away.

(2) Her students really look up to her.

(3) I am really looking towards meeting you.

(4) My dog looks like a tiger.

60. PUT

(1) Meera got the job because she was able to put her ideas forward so convincingly.

(2) Her father told her to put the keys away.

(3) Put on your raincoat, for the weather looks very bad.

(4) Kumar was very angry because his boss continued to put him down.

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. ELUSIVE : CAPTURE

(1) persuasive : convince (2) elastic : stretch

(3) headstrong : control (4) sensible : decide

62. INDOLENT : SLOTH

(1) wrathful : ire (2) arrogant : acuity

(3) impatient : apathy (4) covetous : enigma

63. STARE : GLANCE

(1) participate : observe (2) scorn : admire

(3) hunt : stalk (4) gulp : sip

64. MASTHEAD : NEWSPAPER

(1) footnote : essay (2) credits : film

(3) spine : book (4) advertisement : magazine

65. EPIGRAM : PITHY

(1) saga : heroic (2) anecdote : humorous

(3) proverb : modern (4) elegy : satiric

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 original sentence in the question in each case.*

66. The miscreant shot and the bystander bit the dust

(1) The bystander bit the miscreant

(2) The miscreant got the bystander covered in dust

(3) The miscreant and the bystander got dusty

(4) The miscreant killed the bystander

67. It's unfortunate that we never learn from history

(1) The history course at the university is too difficult

(2) We repeat the mistakes of the past

(3) History is difficult to memorize

(4) History is not credible

68. Nandita got her visa despite the red tape that plagued her

(1) Nandita got her visa even though she had plague

(2) Nandita lost her visa during the plague

(3) Nandita was successful despite the bureaucracy

(4) Nandita's visa had a red tape on it

69. Not a single person had any desire to turn back

(1) It took a long time to turn back

(2) No one turned his back

(3) More than one person wanted to go back

(4) No one wanted to go back

70. If I were you, I'd be delighted with such luck

(1) Luckily, I was there with you

(2) I am so happy at your good luck

(3) I think you have very good luck

(4) You must enlighten me about your good luck

Directions for Questions No. 71 to 75 : *Each of these questions consists of a sentence with four parts underlined. Select the part which is not acceptable as per standard written English.*

71. To implement (1) the new laws may not be (2) easy, but if everyone does (3) their part (4) we will succeed.

72. Any modern (1) novelist would be thrilled (2) to have his stories (3) compared with Dickens. (4)

73. After studying (1) hard to become (2) an accountant, he discovered that it was not (3) what he wanted to do. (4)

74. John will not lend (1) you the book because he is fearful (2) if you will (3) forget to return it. (4)

75. Of the three (1) plants I had (2) in my apartment, only the ivy (3), which is the hardier (4), lived through the winter.

Directions for Questions No. 76 to 80 : *Each of these questions consists of a sentence with one or two blanks, followed by four alternative lettered words or set of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.*

76. He must have an _____ motive for his behaviour, since there is no _____ reason for it.

(1) important — practical
(2) irrelevant — precise
(3) ulterior — obvious
(4) understandable — immediate

77. We were surprised by the _____ with which our proposals were _____ by the different people.

(1) intensity — expedited
(2) unanimity — accepted
(3) acrimony — supported
(4) welcome — evaluated

78. It is hard for an _____ writer to find a _____ publisher.

(1) accomplished — untried
(2) unfledged — sympathetic
(3) unknown — fledging
(4) emerging — new

79. He is so _____ that some people fail to realise how _____ a man he really is.

(1) unassuming — great
(2) unsavoury — smart
(3) unprepossessing — elegant
(4) elegant — bright

80. He felt that everyone was trying to _____ his plans and _____ his success.

(1) obstruct — cause
(2) support — thwart
(3) copy — underline
(4) thwart — prevent

TEST III

QUANTITATIVE APTITUDE

81. The sum of two natural numbers is 85 and their LCM is 102. The numbers are

(1) 50 and 35 (2) 60 and 25

(3) 51 and 34 (4) 45 and 40

82. What is the least perfect square divisible by 8, 9 and 10 ?

(1) 4000 (2) 6400

(3) 14641 (4) 3600

83. The average of four consecutive even numbers is 27. The largest of these numbers is

(1) 24 (2) 30

(3) 26 (4) 28

84. Which among the following is greatest ?

$\sqrt{7} + \sqrt{3}$, $\sqrt{5} + \sqrt{5}$, $\sqrt{6} + 2$

(1) $\sqrt{7} + \sqrt{3}$ (2) $\sqrt{5} + \sqrt{5}$

(3) $\sqrt{6} + 2$ (4) All are equal

85. A number when divided by 238, leaves a remainder 79. What will be the remainder when the number is divided by 17 ?

(1) 8 (2) 9

(3) 10 (4) 11

86. At a certain rate of compound interest, Rs. 15,320 becomes Rs. 30,640 in 6 years. What is the rate of interest ?

(1) 12% (2) 13%

(3) 14% (4) 11%

87. Manu purchases 20 kg apples at Rs. 15/kg and another 10 kg apples at Rs. 20/kg. What is the average cost per kilogram of apples ?

(1) Rs. 15·33/kg (2) Rs. 16·67/kg

(3) Rs. 17·27/kg (4) Rs. 18/kg

88. Akash gives two successive discounts of 10% and 14% on his product. The total discount is

(1) 22·4% (2) 22·6%

(3) 23% (4) 24%

89. One kg of tea and one kg of sugar together cost Rs. 95. If the price of tea falls by 10% and that of sugar rises by 20%, the price of 1 kg combined comes to Rs. 90. The original price of tea per kg is

(1) Rs. 72/- (2) Rs. 55/-

(3) Rs. 60/- (4) Rs. 80/-

90. If the cost price of 6 articles is the same as the selling price of 5 articles, the profit will be

(1) $22\frac{1}{2}\%$ (2) 20%

(3) 25% (4) 19%

91. Compound interest on a sum for 2 years at 4% per annum is Rs. 102. The simple interest on the same sum for the same period at the same rate will be

(1) Rs. 99 (2) Rs. 93

(3) Rs. 97 (4) Rs. 100

92. A man travels 20 km on foot at 5 km/hr and another 10 km by bus at 20 km/hr. What is his average speed ?

(1) 5 km/hr (2) 6 km/hr

(3) 6·67 km/hr (4) 8 km/hr

93. If an article is sold at 8% profit instead of 8% loss, it would have brought Rs. 12 more. Find out the cost price of the article.

(1) Rs. 75 (2) Rs. 72

(3) Rs. 60 (4) Rs. 70

94. If three-fourths of students in the class have cars and half of the car-owners own a Santro, what fraction of the class has a Santro ?

(1) 40% (2) 42·5%

(3) 37·5% (4) 32·5%

95. If the length of a rectangle increases by 10%, by what percent should the breadth decrease to maintain the same area ?

(1) 10% (2) 11%

(3) 9·09% (4) 8·5%

96. Romi purchases toffees at Rs. 10 per dozen and sells them at Rs. 12 for every 10 toffees. Find the gain in percentage.

(1) 44% (2) 24%

(3) 34% (4) 54%

97. An amount kept at C.I. earns an interest of Rs. 600 in the 7^{th} year and an interest of Rs. 660 in the 8^{th} year. Find the rate of interest.

(1) 9% (2) 10%

(3) 11% (4) 8%

98. Anu's expenditure and savings are in the ratio 3 : 2. Her income increases by 10%. If her expenditure increases by 12%, what is the increase in savings in percentage ?

(1) 5% (2) 6%

(3) 7% (4) 8%

99. A group of 7 students with average weight of 66 kg is joined by another group of 5 students with an average weight of 64 kg. What is the average weight of the new group ?

(1) 64·8 kg (2) 64·5 kg

(3) 65·3 kg (4) 65·17 kg

100. A weighing machine shows 900 gm for 1 kg. What is the net profit percentage if the trader marks up his cost price by 20% ?

(1) 7% (2) 10%

(3) 11% (4) 8%

101. Find the value of $\frac{\tan 45^\circ}{\sin 30^\circ + \cos 60^\circ}$.

(1) 4 (2) 6

(3) 1 (4) 7

102. If a = 5, b = 3, c = 2, find the value of (a + b — c) + (a — b + c) + (b + c — a).

(1) 10 (2) 11

(3) 12 (4) 15

103. What will be 80% of a number whose 200% is 90 ?

(1) 36 (2) 40

(3) 48 (4) 52

104. Find x if $\frac{1}{x-3} + \frac{3}{x-1} = \frac{4}{x-2}$.

(1) 4 (2) 3

(3) 2 (4) 5

105. The surface of a cube is 150 sq.m. Find its volume.

(1) 105 cu.m. (2) 110 cu.m.

(3) 150 cu.m. (4) 125 cu.m.

106. Ratio of boys to girls in a class is 5 : 3. Which of these ***cannot*** be the number of students in the class ?

(1) 32 (2) 36

(3) 40 (4) 56

107. A person has a total of Rs. 370 in Rs. 2, Re. 1 and 25 paise coins. They are in the ratio 2 : 5 : 1. How many Re. 1 coins are there ?

(1) 40 (2) 80

(3) 200 (4) 120

108. In a sports meet 5% of participants won prizes. Assuming that each participant got only one prize and total prizes won were 30, what was the total number of participants ?

(1) 500 (2) 600

(3) 1000 (4) 700

109. Three positive numbers are in the ratio 2 : 3 : 4 and the sum of their squares is equal to 464. The numbers are

(1) 6, 8, 10 (2) 4, 6, 8

(3) 8, 12, 16 (4) 10, 20, 30

110. If x : y = 2 : 3, find the value of (3x + 2y) : (2x + 5y).

(1) 15/17 (2) 19/17

(3) 13/18 (4) 12/19

111. The incomes of Bharat and Sudhir are in the ratio 3 : 2 and their expenditures are in the ratio 5 : 3. If each saves Rs. 2,000, what are their incomes ?

(1) Rs. 12,000, Rs. 8,000 (2) Rs. 15,000, Rs. 12,000

(3) Rs. 15,000, Rs. 10,000 (4) Rs. 24,000, Rs. 16,000

112. Simplify $\frac{\sqrt{8} + \sqrt{2}}{\sqrt{8} - \sqrt{2}}$

(1) 2 (2) 6

(3) 3 (4) 4

113. The expense of carpeting a room thrice as long as it is broad at Rs. 7·50 per sq.m. is Rs. 1,102·50. Find the length of the room.

(1) 7 m (2) 14 m

(3) 10 m (4) 21 m

114. Equal quantities of a 1 : 5 and 3 : 5 ratio of milk and water solution are mixed together. What will be the ratio of water and milk in the resultant solution ?

(1) 13 : 35 (2) 4 : 10

(3) 5 : 8 (4) 35 : 13

115. An amount of money is to be divided among A, B and C in the ratio 5 : 8 : 12 respectively. If the total share of B and C is four times that of A, what is A's share ?

(1) Unique solution cannot be found

(2) Rs. 3,000

(3) Rs. 8,000

(4) Rs. 10,000

116. A can do a piece of work in 12 days. B is 60% more efficient than A. Find the number of days that B takes to do the same piece of work.

(1) 6 days (2) 7 days

(3) 10 days (4) $7\frac{1}{2}$ days

117. All the sides of a hexagon become three times the original length. Find the ratio of areas of the new and old hexagons.

(1) 9 : 1 (2) 16 : 1

(3) 36 : 1 (4) 9 : 16

118. In a zoo there are rabbits and pigeons. If heads are counted, there are 200 and if legs are counted there are 580. How many pigeons are there ?

(1) 90 (2) 100

(3) 110 (4) 120

119. If a person drives for 4 hours at a speed of 10 km/hr and for 6 hours at a speed of 20 km/hr, what is the average speed ?

(1) 20 km/hr (2) 18 km/hr

(3) 16 km/hr (4) 14 km/hr

120. In a race of 1 km, A beats B by 100 m or by 5 sec. What is the speed of A ?

(1) 20 m/sec (2) 25 m/sec

(3) 30 m/sec (4) 22·22 m/sec

121. Pipe A can fill the tank in 10 hours, while pipe B can empty the same tank in 25 hours. When both the pipes are open, in what time will the tank fill up ?

(1) 15 hours (2) 20 hours

(3) $16\frac{2}{3}$ hours (4) 18 hours

122. If a clock shows 3·45, what is the acute angle between the hands of the clock ?

(1) 190° (2) 150°

(3) $157\frac{1}{2}°$ (4) $93\frac{1}{2}°$

123. A path 7 m wide surrounds a circular lawn whose diameter is 252 m. Find the area of the path.

(1) 5698 sq.m. (2) 5968 sq.m.

(3) 5689 sq.m. (4) 5678 sq.m.

124. If 83 is multiplied by a certain number and the product is equal to the product of 415×115, what is that number ?

(1) 565 (2) 575

(3) 505 (4) 455

125. A man is 37 years old and his two sons are 8 years and 3 years old. After how many years will he be twice as old as their united age ?

(1) 4 years (2) 8 years

(3) 7 years (4) 5 years

126. Which of the following ***cannot*** be the unit digit in a perfect square number ?

(1) 9 (2) 7

(3) 5 (4) 1

Directions for Questions no. 127 to 130.

Study the following table and answer following questions based on it.

Production of Automobiles (in million)

Name of the vehicle	1980 – 81	2004 – 05
Scooters	51·0	173·0
Cars	6·9	205·0
Trucks	5·1	16·9

127. What is the percentage increase in 2004 – 05 in the production of scooters ?

(1) 239·2

(2) 70·5

(3) 41·8

(4) 29·5

128. The production of cars in 1980 – 81 is approximately what percent of production of cars in 2004 – 05 ?

(1) 96·6

(2) 3·4

(3) 287·7

(4) 92·0

129. The production of trucks in 2004 – 05 is how many times more than that in 1980 – 81 ?

(1) 3·3

(2) 1·3

(3) 4·3

(4) 2·3

130. The total production of vehicles in 2004 – 05 is approximately what percent of production in 1980 – 81 ?

(1) 626·8

(2) 15·9

(3) 526·8

(4) 25·9

TEST IV

REASONING

Directions for Questions No. 131 – 134. *Consider the following information.*

Six school board members — A, B, C, D, E and F — are seated at a conference table in the auditorium. They take six seats, numbered 1 through 6 from left to right, on the same side of the table. However, there are the following restrictions on seating :

(i) A has openly clashed with B, and cannot be seated immediately to the left or immediately to the right of B.

(ii) C has a hearing impairment that only D knows about, and so must be immediately to the left of D.

(iii) F will not occupy seat 6 at the table.

131. Which of the following board members ***cannot*** be seated in seat 1 ?

(1) A
(2) B
(3) C
(4) D

132. If D is seated in seat 3, C must be seated in seat

(1) 1
(2) 2
(3) 4
(4) 5

133. If A is seated in seat 5, which of the remaining board members must be seated in seat 6 ?

(1) C
(2) D
(3) E
(4) F

134. If F is seated in seat 3, immediately to the right of D, which of the remaining board members must be seated in seat 5 ?

(1) E
(2) D
(3) C
(4) B

Directions for Questions No. 135 – 140. *Find the number that comes next in the sequence.*

135. 5, 6, 7, 8, 10, 11, 14, 15, _____

(1) 17 (2) 19

(3) 20 (4) 23

136. 4, 10, 28, 82, 244, _____

(1) 488 (2) 612

(3) 644 (4) 730

137. 0·5, 0·55, 0·65, 0·8, _____

(1) 0·9 (2) 0·95

(3) 1·0 (4) 1·05

138. 4, 23, 60, 121, _____

(1) 212 (2) 242

(3) 101 (4) 100

139. 840, 168, 42, 14, 7, _____

(1) 0 (2) 7

(3) 1 (4) 5

140. 0, 2, 8, 14, 24, 34, 48, _____

(1) 60 (2) 61

(3) 62 (4) 66

141. If N is the average (arithmetic mean) of five numbers, which of the following must be true ?

I. At least one of the five numbers is greater than or equal to N.

II. At least one of the five numbers is less than or equal to N.

III. At least two of the five numbers are greater than or equal to N.

(1) I only (2) II only

(3) I and II only (4) I and III only

142. If the sum of two numbers is known, which of the following is ***not*** sufficient to determine the values of the two numbers ?

(1) One number is greater than the other

(2) The cube of one number is 8

(3) The product of the two numbers is 8

(4) One number is half the other

Directions for Questions No. 143 – 147 : *Study the following information.*

(i) A, B, C, D, E and F are six members in a family in which there are two married couples.

(ii) E, a professor, is married to a doctor who is the mother of C and F.

(iii) B, the lawyer, is married to A.

(iv) A has one son and one grandson.

(v) Of the two married ladies one is a housewife.

(vi) There is also one student and one male engineer in the family.

143. How is A related to C ?

(1) Grandfather (2) Mother

(3) Sister (4) Grandmother

144. Who among the following is the housewife ?

(1) A (2) B

(3) D (4) E

145. How is C related to F ?

(1) Brother (2) Sister

(3) Brother or Sister (4) Data inadequate

146. Which of the following represents the group of females in the family ?

(1) ADC (2) ADF

(3) BEC (4) Data inadequate

147. Which of the following is true about the granddaughter in the family ?

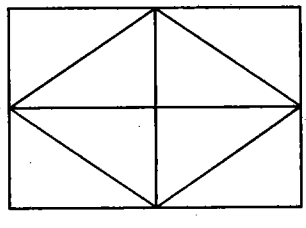
(1) She is a lawyer

(2) She is a student

(3) She is an engineer

(4) Data inadequate

148. What is the number of triangles in the following figure ?



(1) 8

(2) 10

(3) 12

(4) 16

149. Some boys are sitting in a row. P is sitting fourteenth from the left and Q is seventh from the right. If there are four boys between P and Q, how many boys are there in the row, considering that Q is to the right of P ?

(1) 25

(2) 21

(3) 20

(4) 18

150. A bus for Delhi leaves every thirty minutes from a bus stand. An enquiry clerk told a passenger that the bus had already left ten minutes back and the next bus will leave at 9·35 a.m. At what time did the enquiry clerk give this information to the passenger ?

(1) 8·55 a.m.

(2) 9·08 a.m.

(3) 9·10 a.m.

(4) 9·15 a.m.

Directions for Questions No. 151 to 155. *In each of these questions, four words have been given, out of which three are alike in some manner and the fourth one is different. Find out the odd one.*

151. (1) Curd (2) Butter

(3) Oil (4) Cheese

152. (1) Rose (2) Lotus

(3) Lily (4) Marigold

153. (1) Arrow (2) Sword

(3) Axe (4) Knife

154. (1) Metre (2) Yard

(3) Mile (4) Acre

155. (1) Tortoise (2) Duck

(3) Snake (4) Whale

Directions for Questions No. 156 to 161 : *Study the following information.*

A circus manager must divide eight circus acts — F, L, M, O, R, T, X, and Z — into two groups of four acts each, one group scheduled to perform, one act at a time, in ring 1 and the other group scheduled to perform, also one act at a time, in ring 2. All acts take equally long to perform, and every act that takes place in one of the rings must be scheduled for exactly the same time slot as an act that takes place in the other ring. The schedule must also conform to the following conditions :

(i) Act F must take place in one of the rings at the same time that act M takes place in the other ring.

(ii) Act L must take place in one of the rings at the same time that act O takes place in the other ring.

(iii) Act R must take place in the same ring as act F.

(iv) Act T must take place in the same ring as act O.

(v) Act X must be the second act that takes place in ring 2.

156. Which of the following, without regard to the order in which they will be performed, could be the group of acts to be scheduled for performance in ring 1 ?

(1) L, M, O, and T (2) M, O, T, and Z

(3) F, L, M, and T (4) F, L, O, and T

157. If act T performs in ring 1, which of the following acts must perform in ring 2 ?

(1) L (2) M

(3) R (4) Z

158. If act R must perform in one of the rings at the same time that act T performs in the other ring, which of the following must be the second act in ring 1 ?

(1) M (2) O

(3) Z (4) F

159. If the order, from first to last, of circus acts in ring 2 is O, X, T, M, which of the following is an acceptable order of acts in ring 1, also from first to last ?

(1) L, Z, F, R (2) L, Z, R, F

(3) Z, L, F, R (4) Z, R, L, F

160. If act F must perform between act X and act R in ring 2, which of the following must be the first act in ring 1 ?

(1) L (2) M

(3) O (4) Z

161. If act T must take place in ring 1 immediately after act F and immediately before act R, which act must be the third act in ring 2 ?

(1) M (2) O

(3) T (4) Z

162. A decrease of 1 in which of the factors below would result in the greatest decrease in the product ?

$11 \times 13 \times 17 \times 19$

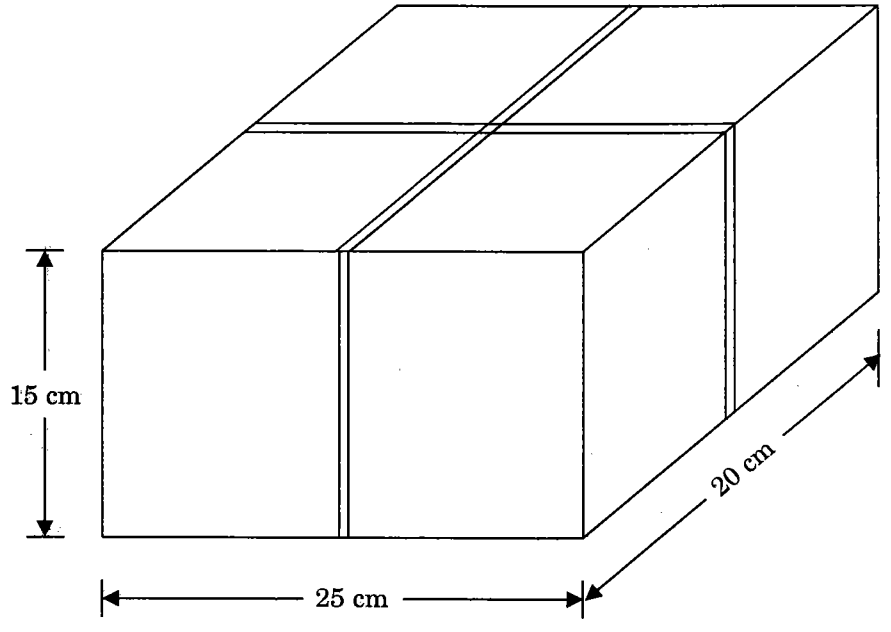
(1) 11

(2) 13

(3) 17

(4) 19

163. The rectangular box shown below has been wrapped with two tapes, each going exactly once around the box and running parallel to the edges of the box. How many centimeters of tape were used on the box ?



(1) 80 cm

(2) 150 cm

(3) 120 cm

(4) 200 cm

164. 'Hair' is to 'Bald' as 'Vegetation' is to

(1) Land

(2) Green

(3) Irrigation

(4) Barren

Directions for Questions No. 165 – 170 : *Consider the following information.*

Five students A, E, I, O, and U were comparing the scores each received in a test and a quiz. The following were discovered :

(i) A's quiz score was 80.

(ii) A's test score equals U's quiz score.

(iii) U's test score equals A's quiz score.

(iv) A's quiz score is 15 less than U's quiz score.

(v) O's test score is 20 more than his quiz score and is 20 more than I's test score.

(vi) O's test score is 40 more than E's quiz score.

(vii) I's quiz score is 10 less than E's quiz score.

165. If E's quiz score is 60, what is O's quiz score ?

(1) 80 (2) 70

(3) 50 (4) 40

166. Which of the following is true ?

I. I's test score equals O's quiz score.

II. E's quiz score equals U's quiz score.

III. A's quiz score equals U's test score.

(1) I only (2) III only

(3) I and III only (4) II and III only

167. What is U's test score ?

(1) 55 (2) 80

(3) 95 (4) 100

168. If I's test score is 45, what is O's test score ?

(1) 35 (2) 45

(3) 55 (4) 65

169. If E's quiz score is 50, which of the following is true ?

I. I's test score is 70

II. O's test score is 90

III. I's quiz score is 30

(1) I only (2) II only

(3) III only (4) I and II only

170. If O's quiz score is same as U's quiz score, which of the following must be true ?

I. I's test score is 95

II. O's test score is 110

III. I's quiz score is 70

IV. E's quiz score is 70

(1) I only (2) II and IV only

(3) I and III only (4) II and III only

171. A father tells his son, "I was of your present age when you were born." If the father is 46 years old now, how old was the boy five years back ?

(1) 15 (2) 17

(3) 18 (4) 19

172. In the figure below, if x = ky, and k is a constant, what is the missing value of y in the table ?

x	5	$\frac{5}{9}$
y	3	?

(1) $\frac{1}{27}$ (2) $\frac{1}{3}$

(3) $\frac{25}{27}$ (4) $\frac{27}{25}$

173. The average of two numbers is XY. If one number is equal to X, the other number is equal to

(1) Y (2) 2Y

(3) XY — X (4) 2XY — X

Directions for Questions No. 174 to 176.

Unscramble the letters in the following words and find the odd man out.

174. (1) RDE

(2) RWBON

(3) LOCORU

(4) LUBE

175. (1) OKOB

(2) NEP

(3) CEPNIL

(4) APPRE

176. (1) IMWS

(2) KALW

(3) URN

(4) NISELT

177. City X is 200 miles east of city Y, and city Z is 150 miles directly north of city Y. What is the shortest distance (in miles) between X and Z ?

(1) 175 (2) 200

(3) 250 (4) 300

178. Points B and C lie on line AD so that AB = BC = CD. What part of AD is AC ?

(1) $\frac{1}{4}$ (2) $\frac{1}{3}$

(3) $\frac{1}{2}$ (4) $\frac{2}{3}$

179. Which of the following equations gives the relationship between R and S in the table below ?

R	1	2	3	4	5	6
S	2	5	8	11	14	17

(1) $S = 2R$ (2) $S = R^2 + 1$

(3) $S = R^2 - 1$ (4) $S = 3R - 1$

Directions for Questions No. 180 – 184. *Consider the following information.*

A cube is painted red on two adjacent faces, black on the faces opposite to the red faces and green on the remaining faces. It is then cut into 64 smaller cubes of equal size.

180. How many cubes are there which have no face painted ?

(1) 0 (2) 4

(3) 8 (4) 12

181. How many cubes have only one face painted ?

(1) 16 (2) 24

(3) 36 (4) 48

182. How many cubes have two faces painted ?

(1) 8 (2) 16

(3) 24 (4) 30

183. How many cubes are there with three faces painted ?

(1) 8 (2) 10

(3) 12 (4) 14

184. How many cubes have one face green and one of the adjacent faces black or red ?

(1) 8 (2) 16

(3) 24 (4) 28

Directions for Questions No. 185 – 188. *Consider the following information.*

(i) I, B, and P are three friends. Each of them is either an American or an Indian.

(ii) I is not an Indian.

(iii) P is not a singer.

(iv) Each of them is either a singer or a dancer.

(v) American cannot sing and citizens of a country do not have the same vocation.

185. Who is Indian among the following ?

(1) B only (2) P only

(3) B and P (4) Either B or P

186. Who among the following are Americans ?

(1) I and B (2) I only

(3) I and P (4) Data insufficient

187. Who among the following is a singer ?

(1) I (2) B

(3) P (4) I and B

188. B is an

(1) Indian dancer (2) American dancer

(3) Indian singer (4) American singer

Directions for Questions No. 189 to 192. *Consider the following information.*

B, C, D, E, F and G are to be seated around a table. The following requirements apply to the seating arrangement :

(i) D must sit next to F

(ii) B cannot sit next to F

(iii) C cannot sit next to G

189. If D is one of the two persons who sit next to E, which of the following is a complete and accurate list of the other person who can sit next to E ?

(1) C or G (2) C

(3) G (4) B

190. Who must sit on either side of E if B sits next to D and C sits next to F ?

(1) B and G (2) B and C

(3) B and F (4) C and G

191. If C sits immediately to the left of F and D sits immediately to the right of F, what is the total number of arrangements in which others can be seated in relation to one another ?

(1) 2 (2) 3

(3) 4 (4) 5

192. Who must sit on the chairs on either side of G if C sits directly across the table from E ?

(1) C and D (2) D and E

(3) E and F (4) B and E

Directions for Questions No. 193 to 197. *Consider the following information.*

Six lectures A, B, C, D, E and F are to be organized in a span of seven days — from Sunday to Saturday, only one lecture on each day, in accordance with the following :

(i) A should not be organized on Thursday.

(ii) C should be organized immediately after F.

(iii) There should be a gap of two days between E and D.

(iv) One day there will be no lecture (Friday is ***not*** that day); just before that day D will be organized.

(v) B should be organized on Tuesday and should not be followed by D.

193. How many lectures are organized between C and D ?

(1) 0 (2) 1

(3) 2 (4) 3

194. Which of the following is the last lecture in the series ?

(1) A (2) B

(3) C (4) E

195. Which of the information given above is ***not*** required in finding the complete sequence of organization of lectures ?

(1) I only (2) II only

(3) I and II only (4) All are required

196. Which day will the lecture F be organized ?

(1) Sunday (2) Thursday

(3) Wednesday (4) Friday

197. On which day is there no lecture ?

(1) Sunday (2) Friday

(3) Monday (4) Cannot be determined

Directions for Questions No. 198 – 200. *Consider the following information.*

Exactly 7 persons — I, J, K, L, M, N and O — participate in games played at a picnic. There is one game each of a, b, and c. Game 'a' must be played by either 3 or 4 persons, 'b' must be played by either 4 or 6 persons, and 'c' can be played by any number so long as there are at least 2. The following restrictions also apply to the games played :

(i) Each person must play exactly two of the three games

(ii) I must play 'a'

(iii) K must play 'c'

(iv) N must play 'b'

(v) M must play in both games in which I plays

(vi) O must play in both games in which L plays

198. If K plays in the same two games as N, each of the following must be true *except*

(1) I plays 'a'

(2) N plays 'a'

(3) K plays 'c'

(4) K plays 'b'

199. If I and N play 'c', and if 4 persons play 'a', the persons playing 'a' besides I and M, must be which of the following ?

(1) J and K

(2) J and N

(3) K and O

(4) L and N

200. If N is the only person who plays both 'a' and 'b', it must be true that

(1) M plays 'b'

(2) K plays 'b'

(3) N plays 'c'

(4) I plays 'c'

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK