OPENMAT (XXI) Entrance Test for
Management Programmes 2007

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 III
QUANTITATIVE APTITUDE

81. How many numbers are there between 200 and 300 in which 9 occurs only once ?

    (1) 19   (2) 20

    (3) 18   (4) 21

82. An amount of Rs. 417 is divided among A, B, C and D in such a way that A gets Rs. 13 more than B, B gets Rs. 9 more than C, and C gets Rs. 6 more than D. Find A's share.

    (1) Rs. 121   (2) Rs. 116

    (3) Rs. 120   (4) Rs. 124

83. Find the value of $\sin 45° \cdot \cos 45° - \sin^2 30°$.

    (1) $\dfrac{1}{4}$ (2) $\dfrac{1}{2}$

    (3) $\dfrac{1}{3}$ (4) 1

84. In how many ways can 36 be written as a product of two natural numbers ?

    (1) 4   (2) 5

    (3) 3   (4) 9

85. The value of a number is five times the sum of its digits. The number is

    (1) 36   (2) 27

    (3) 45   (4) 18

86. Manu took a loan of Rs. 20,000 at 5% SI for 2 years and invested it at 4% CI for the same period. What is the gain/loss in the transaction ?

    (1) Rs. 368 gain   (2) Rs. 423 gain

    (3) Rs. 368 loss   (4) Rs. 200 gain

87. Jaya spends $\dfrac{1}{4}$th of her leisure hours on reading and $\dfrac{2}{3}$rd of the remaining on watching television. If she spends 2 hours on watching TV, what is the total time of her leisure ?

    (1) 6 hours   (2) 8 hours

    (3) 2 hours   (4) 4 hours

88. A plant reproduces at the rate of 25% every 12 min. In approximately how much time will it triple itself ?

    (1) 90 min

    (2) 60 min

    (3) 40 min

    (4) 75 min

89. Six friends have an average height of 167 cm. Sonu with height 162 cm leaves. What is the new average ?

    (1) 168 cm

    (2) 166 cm

    (3) 170 cm

    (4) 169 cm

90. What strength of 20 ml acid should be added to 10 ml of 50% acid to get an average strength of 20% acid ?

    (1) 0·5%

    (2) 5%

    (3) 50%

    (4) 5·5%

91. A dishonest shopkeeper uses a weight of 800 gm in place of 1 kg and adds 20% impurities in wheat. What would be his profit percentage if he claims to be selling at cost price ?

    (1) 30%

    (2) 40%

    (3) 50%

    (4) 60%

92. If the price of sugar is raised by 30%, find how much percent a housewife must reduce her consumption to keep her sugar expenditure the same ?

    (1) 25%

    (2) 20%

    (3) 23%

    (4) $16\frac{2}{3}$%

93. The value of 3333 — 333 ÷ 3 is

    (1) 1000

    (2) 2000

    (3) 3222

    (4) 3122

94. The product of 0·3, 0·03 and 0·003 is

    (1) 0·333

    (2) 0·00027

    (3) 0·0000027

    (4) 0·000027

95. If a train travels 90 km in one hour, how long will it take to travel 21 km ?

    (1) 20 minutes

    (2) 14 minutes

    (3) 12 minutes

    (4) 17 minutes

96. If A : B = 2 : 3, B : C = 5 : 9, then A : B : C is

   (1) 10 : 15 : 17   (2) 10 : 15 : 18

   (3) 10 : 15 : 27   (4) 10 : 18 : 15

97. What percent of 850 is 8·5 ?

   (1) 0·1%   (2) 1·0%

   (3) 1·1%   (4) 100%

98. Which of following is the largest ?

$$\frac{3}{8}, \frac{7}{16}, \frac{5}{12}, \frac{1}{6}$$

   (1) $\dfrac{5}{12}$ (2) $\dfrac{7}{16}$

   (3) $\dfrac{3}{8}$ (4) $\dfrac{1}{6}$

99. Simplify $\dfrac{(0.9)^3 - (0.1)^3}{(0.9)^2 - (0.1)^2}$

   (1) 0·8   (2) 0·81

   (3) 0·91   (4) 1·01

100. What smallest number should be added to make 831 exactly divisible by 17 ?

   (1) 3   (2) 2

   (3) 4   (4) 5

101. In an examination 65% of the candidates passed in English and 56% passed in Mathematics while 25% failed in both the subjects. What percentage passed in both the subjects ?

   (1) 46%   (2) 56%

   (3) 54%   (4) 27%

102. $\dfrac{2}{5}$ th of a property is worth Rs. 10,000/-. What is $\dfrac{7}{10}$ th of the property worth ?

   (1) Rs. 27,500/-   (2) Rs. 16,500/-

   (3) Rs. 17,500/-   (4) Rs. 15,000/-

103. A tradesman marks his goods at 20% above cost price and allows purchases at a discount of 10% for cash. What is his gain percent ?

   (1) 10   (2) 12

   (3) 8   (4) 18

104. A man invests Rs. 4,400/- in a stock at 110 and sells out when the stock rises to 119. What is his profit ?

(1) Rs. 396/-   (2) Rs. 380/-

(3) Rs. 360/-   (4) Rs. 340/-

105. A mixture of 20 litres of milk and water contains 10% water. How much water should be added to it to increase the percentage of water to 25 ?

(1) 5 litres   (2) 3 litres

(3) 2 litres   (4) 4 litres

106. A can do a piece of work in 20 days. He worked at it for 2 days. Then B completed it in 9 days. In how many days can B alone do the whole work ?

(1) 10 days   (2) 11 days

(3) 13 days   (4) 12 days

107. A boat is rowed down a river at 10 km/hr and up the river at 2 km/hr. Find the speed of the current.

(1) 8 km/hr   (2) 6 km/hr

(3) 3·5 km/hr   (4) 4 km/hr

108. A camp has provisions to last for 6 weeks for 224 cadets. How many cadets must be sent away in order that provisions last for 7 weeks ?

(1) 192   (2) 32

(3) 48   (4) 96

109. The radius of the circle whose area is equal to the sum of the areas of two circles whose radii are 5 cm and 12 cm respectively, is

(1) 19 cm   (2) 17 cm

(3) 13 cm   (4) 14 cm

110. In a race, the speeds of A and B are in the ratio 3 : 4. A takes 30 min more than B to reach the destination. The time taken by A to reach the destination is

(1) 1 hr   (2) 90 min

(3) 2 hr   (4) 2·5 hr

111. If there is Rs. 495/- in a bag in denominations of one-rupee, 50-paise and 25-paise coins which are in the ratio 1 : 8 : 16, how many 50-paise coins are there in the bag ?

    (1) 50

    (2) 220

    (3) 440

    (4) 200

112. A father's age is four times the age of his elder son and five times that of his younger son. When the elder son has lived to three times his present age, then the father's age will exceed twice that of his younger son's by 3 years. What is the father's age ?

    (1) 40 years

    (2) 32 years

    (3) 30 years

    (4) 50 years

113. A person is standing on a staircase. He walks down 4 steps, up 3 steps, down 6 steps, up 2 steps, up 9 steps and down 2 steps. Where is he standing now in relation to the step on which he stood when he started ?

    (1) 2 steps up

    (2) 1 step up

    (3) At the same place

    (4) 1 step down

114. Two pipes A and B can fill a tank in 4 hr. and 5 hr. respectively. If they are turned on alternately for 1 hr. each, the tank will be filled in (assume A was turned on first)

    (1) 4 hr. 24 min

    (2) 4 hr.

    (3) 4·5 hr.

    (4) 5 hr.

115. If the train A running at 72 km/hr. crosses a tree standing by the side of the track in 7 sec., the length of the train is

    (1) 150 m

    (2) 135 m

    (3) 140 m

    (4) 126 m

116. What is the surface area of a sphere whose diameter is 21 cm ?

    (1) 1286 sq.cm

    (2) 1386 sq.cm

    (3) 1486 sq.cm

    (4) 1000 sq.cm

117. In 2004, the rainfall in Kolkata was 80% of the normal. If he actual rainfall was 36 cm, what is the normal rainfall for Kolkata ?

    (1) 35 cm

    (2) 55 cm

    (3) 48 cm

    (4) 45 cm

118. Due to 30% fall in price of TV sets, there is a rise of 20% in sales. How will the income of the shop be affected ?

    (1) 16% rise
    (2) 16% fall
    (3) 15% fall
    (4) 20% rise

119. Find the longest possible pole that can be kept in a room 7 m long, 5 m broad and 4 m high.

    (1) $2\sqrt{10}$ m
    (2) $3\sqrt{10}$ m
    (3) $4\sqrt{10}$ m
    (4) $10\sqrt{3}$ m

120. Simplify $\dfrac{0.6 \times 0.6 \times 0.6 \; + \; 0.4 \times 0.4 \times 0.4}{0.3 \times 0.3 \times 0.3 \; + \; 0.2 \times 0.2 \times 0.2}$

    (1) 8
    (2) 6
    (3) 4
    (4) 18

121. A bag contains 8 red, 7 green and 5 blue balls. What is the maximum number of balls which should be drawn to ensure that at least one ball of each colour is drawn ?

    (1) 9
    (2) 11
    (3) 14
    (4) 16

122. The fifth part of a certain number exceeds its seventh part by 10. The number is

    (1) 150
    (2) 175
    (3) 205
    (4) 200

123. If $x + \dfrac{4}{x} = 4$, then $x = ?$

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

124. Amit spent Rs. 501 in buying tables and chairs. If each table costs Rs. 21/- and each chair costs Rs. 15/- and the total number of articles bought was 27. How many of each kind did Amit buy ?

    (1) 16 tables, 11 chairs
    (2) 15 tables, 12 chairs
    (3) 17 tables, 10 chairs
    (4) 18 tables, 9 chairs

125. How many lead balls each of radius 1 cm can be made from a sphere of radius 8 cm ?

    (1) 64
    (2) 128
    (3) 256
    (4) 512

Directions for Questions No. 126 to 130 :

The following table gives information on expenditure by different sectors in 2004 – 05 in crores of rupees. Answer the questions based on these.

Sector	Expenditure (in crores of Rs.)
IT industry	470
Agriculture	620
Education	280
Irrigation	530
Health	330

126. The expenditure on agriculture is nearly how many times more than the expenditure on education ?

    (1) $\dfrac{17}{14}$

    (2) $\dfrac{31}{14}$

    (3) $\dfrac{12}{7}$

    (4) $\dfrac{24}{7}$

127. What percent of the whole expenditure is spent on IT industry ?

    (1) 21

    (2) 26·7

    (3) 21·9

    (4) 22

128. The expenditure on irrigation is how much per cent more than the expenditure on health ?

    (1) 39·4

    (2) 3·94

    (3) 60·6

    (4) 6·06

129. The expenditure on education is how much percent less than the expenditure on IT industry ?

    (1) 60·6

    (2) 6·06

    (3) 40·4

    (4) 4·04

130. The ratio of expenditure on health to the expenditure on agriculture is

    (1) 1 : 53

    (2) 53 : 1

    (3) 33 : 62

    (4) 30 : 62