OPENMAT (XXV) Entrance Test for
Management Programmes 2009

23915

FEBRUARY, 2009

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 circle 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 circle 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 and 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 circle 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 circle '0'.

6. If you wish to change your answer, ERASE completely the already darkened circle by using a good quality eraser and then blacken the circle bearing your revised answer number. If incorrect answer is not erased completely, smudges will be left on the erased circle 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.

81. Which digits should come in place of * and $ if the no. 62684*$ is divisible by both 8 and 5 ?

    (1) 4, 0   (2) 0, 4   (3) 2, 4   (4) 8, 9

82. $100 \div 16\frac{2}{3} = ?$

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

83. Find 8% of Rs. 625.

    (1) 100   (2) 75   (3) 50   (4) 25

84. Find the value of x if $\sqrt{2+\sqrt{2+\sqrt{2+......}}} = x$:

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

85. Three fifth of the square of a certain no. is 126.15. What is the number ?

    (1) 14.5   (2) 78.69   (3) 145   (4) 210.25

86. In the first 10 overs of a cricket game the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs ?

    (1) 6.25   (2) 6.5   (3) 6.75   (4) 7

87. The difference between a two digit number and the no. obtained by interchanging the digit is 36. What is the difference between the sum and the difference of the digits of the no. if the ratio between the digits of the number is 1 : 2 ?

    (1) 4   (2) 8   (3) 16   (4) 32

88. A person was asked to state his age in years. His reply was "Take my age three year hence multiply it by 3 and then substract three times my age three years ago and you will know how old I am". What was the age of the person ?

    (1) 24 years   (2) 20 years   (3) 18 years   (4) 32 years

89. $\left(\dfrac{x^a}{x^b}\right)^{1/ab} \cdot \left(\dfrac{x^b}{x^c}\right)^{1/bc} \cdot \left(\dfrac{x^c}{x^a}\right)^{1/ca} = ?$

    (1) 1   (2) $x^{1/abc}$ (3) 2   (4) 0

90. If $x\%$ of y is 100 and $y\%$ of z is 200, then find the relation between x and z.

   (1) $z = 2x$ (2) $z = \dfrac{x}{2}$ (3) $z = \dfrac{x}{4}$ (4) $z = 4x$

91. The marked price of a watch was Rs. 720. A man bought the same for Rs. 550.80 after getting two successive discounts, the first being 10%. What was the second rate ?
   (1) 12%   (2) 14%   (3) 15%   (4) 18%

92. A sum of Rs. 53 is divided among A, B and C in such a way that A gets Rs. 7 more than what B gets and B gets Rs. 8 more than what C gets. The ratio of their shares is :
   (1) 16 : 9 : 18   (2) 25 : 18 : 10   (3) 18 : 25 : 10   (4) 15 : 8 : 30

93. The time in a clock is 20 minutes past 4 O' clock. Find the angle between hands of the clock.
   (1) 0°   (2) 10°   (3) 5°   (4) 3°

94. The product of two fractions is $\dfrac{14}{15}$ and their quotient is $\dfrac{35}{24}$. The greater fraction is :

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

95. The total of the ages of Jayant, Prem and Saransh is 93 years. Ten years ago the ratio of their ages was 2 : 3 : 4. What is the present age of Saransh ?
   (1) 24 years   (2) 32 years   (3) 34 years   (4) 38 years

96. Some persons can do a piece of work in 12 days. Two times the no. of such persons will do half of that work in :
   (1) 6 days   (2) 4 days   (3) 3 days   (4) 12 days

97. Divide : $-9\,a^2\,b^3\,c^4$ by $3\,a\,b^2\,c^3$
   (1) $-3\,a\,b\,c^2$ (2) $-3\,a^2\,b\,c$ (3) $3\,a\,b\,c$ (4) $-3\,a\,b\,c$

98. One pipe can fill a tank three times as fast as another pipe. If together the two pipes can fill the tank in 36 minutes, then the slower pipe alone will be able to fill the tank in :
   (1) 81 min.   (2) 108 min.   (3) 144 min.   (4) 192 min.

99. Two trains starting at the same time from two stations 200 km apart and going in opposite directions cross each other at a distance of 110 km from one of the stations. What is the ratio of their speeds ?

   (1)   9 : 20   (2)   11 : 9   (3)   11 : 20   (4)   11 : 21

100. In what proportion must a grocer mix two teas, one priced Rs. 1.25/kg and the other Rs. 1.50/kg so that the mixture may be worth Rs. 1.30/kg ?

   (1)   1 : 1   (2)   2 : 1   (3)   3 : 1   (4)   4 : 1

101. The speed of a boat in still water is 15 km/hr. and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is :

   (1)   1.2 km   (2)   1.8 km   (3)   2.4 km   (4)   3.6 km

102. A dishonest milkman professes to sell his milk at cost price but he mixes it with water and thereby gains 25%. The percentage of water in the mixture is :

   (1)   4%   (2) $6\dfrac{1}{4}\%$ (3)   20%   (4)   25%

103. At what rate percent per annum will the simple interest on a sum of money be 2/5 of the amount in 10 years ?

   (1)   4%   (2) $5\dfrac{2}{3}\%$ (3)   6%   (4) $6\dfrac{2}{3}\%$

104. If $\log x + \log y = \log (x+y)$ then :

   (1) $x=y$ (2) $xy=1$ (3) $y=\dfrac{x-1}{x}$ (4) $y=\dfrac{x}{x-1}$

105. If the radius of a circle is increased by 75%, then its circumference will increase by :

   (1)   25%   (2)   50%   (3)   75%   (4)   100%

106. Shyam was 12 years old y years ago. Represent his age b years from now :

   (1) $b+y$ (2) $12y+b$ (3) $12+y+b$ (4) $12y-b$

107. $\sqrt{1.69} - \sqrt{0.01} = ?$

    (1)   1.10   (2)   1.20   (3)   1.30   (4)   1.40

108. Find the value of $\dfrac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$, Given $\sqrt{6} = 2.449$:

    (1)   9.3   (2)   9.8   (3)   9.9   (4)   9.7

109. How many times do the hands of a clock coincide in a day ?

    (1)   20   (2)   21   (3)   22   (4)   24

110. If $x = \sqrt{3018 + \sqrt{36 + \sqrt{169}}}$, the value of x is :

    (1)   43   (2)   55   (3)   44   (4)   69

111. How many arrangements can be made out of the letter of the word ENGINEERING ?

    (1)   277200   (2)   92400   (3)   69300   (4)   23100

112. The average of 11 numbers is 109. If the average of first six numbers is 105 and that of the last six numbers is 114, what is the middle number ?

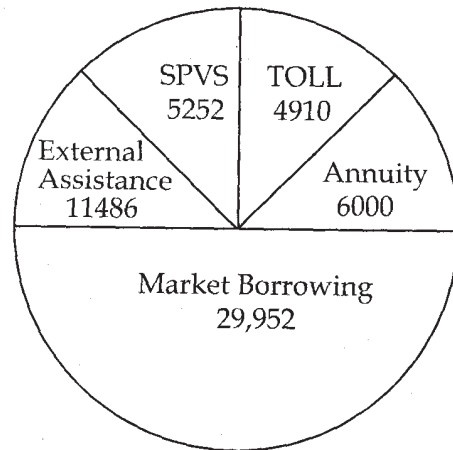   (1)   125   (2)   110   (3)   120   (4)   115

113. The angle of elevation of the top of a tower from a certain point is 30°. If the observer moves 20 m towards the tower the angle of elevation of the top of the tower increases by 15°. The height of the tower is :

    (1)   17.3 m   (2)   21.9 m   (3)   27.3 m   (4)   30 m

114. Find the wrong number in the series, 15, 16, 34, 105, 424, 2124, 12576 :

    (1)   15   (2)   34   (3)   105   (4)   2124

The following pie chart shows the sources of funds to be collected by the NHAI for its phase II project. Study the pie-chart and answer Question No. 115 to 119.

Total funds to be arranged for project (phase II) = Rs. 57600 crores.

115. Near about 20% of the funds are to be arranged through :
    (1) SPVS
    (2) External Assistance
    (3) Annuity
    (4) Market Borrowing

116. The centre angle corresponding to Market Borrowing is :
    (1) 52°
    (2) 137.8°
    (3) 187.2°
    (4) 192.4°

117. The approximate ratio of the funds to be arranged through Toll and that through Market Borrowing is :
    (1) 2 : 9
    (2) 1 : 6
    (3) 3 : 1
    (4) 2 : 5

118. If NHAI could receive a total of Rs. 9695 crores as External Assistance by what percent should it increase the market borrowing to arrange for the shortage of funds :
    (1) 4.5%
    (2) 7.5%
    (3) 6%
    (4) 8%

119. If the toll to be collected through an outsourced agency by allowing a maximum 10% commission how much amount should be permitted to be collected by the outsourced agency so that the project is supported with Rs. 4910 crores.
    (1) Rs. 6213 crores
    (2) Rs. 5827 crores
    (3) Rs. 5455 crores
    (4) Rs. 5216 crores

120. $\dfrac{(0.5)^3 + (0.6)^3}{(0.5)^2 - 0.03 + (0.6)^2}$ is equal to :

    (1) 0.11
    (2) 0.33
    (3) 1.1
    (4) 3.3

121. At what percent above the cost price must an article be marked so as to gain 33% after allowing a customer a discount of 5% ?
    (1)   48%   (2)   43%   (3)   40%   (4)   38%

122. If a, b, c, d, e are five consecutive odd integers, what is their average ?
    (1) $\dfrac{a\,b\,c\,d\,e}{5}$ (2) $a+4$

    (3) $5(a+b+c+d+e)$ (4) $a+\dfrac{5}{2}$

123. A football team won 40% of the total no. of matches it played during a year. If it lost 50% of the matches played and 20 matches were drawn the total number of matches played by the team during the year was :
    (1)   40   (2)   50   (3)   100   (4)   200

124. The average of 6 numbers is 10. If the average of four of the numbers is 12, then the average of remaining numbers is :
    (1)   4   (2)   6   (3)   8   (4)   10

125. The LCM of two numbers is 63, and their HCF is 9. If one of the number is 27 the other number will be :
    (1)   9   (2)   21   (3)   17   (4)   189

126. Each interior angle of a regular polygon is approximately 157°. The number of sides of the polygon :
    (1)   8   (2)   10   (3)   12   (4)   14

127. In a group of 26 persons, 8 take tea but no coffee and 16 take tea. Then the persons who take coffee but do not take tea are :
    (1)   5   (2)   10   (3)   15   (4)   20

128. A solid cylinder has four times height then its radius. It is melted and cast into a cone of the same base. The ratio of their height is :
    (1)   3 : 1   (2)   1 : 2   (3)   1 : 3   (4)   3 : 5

129. A tank is full of milk from which 10 litres were taken out of 100 litres and then the tank is filled with water. This is done twice. The quantity of milk now left over in tank is :
    (1)   80 litres   (2)   81 litres   (3)   85 litres   (4)   89 litres

130. What should be added to 13533 to make it exactly divisible by 31 ?
    (1)   14   (2)   17   (3)   41   (4)   71