Sl. No. : **MB/MCCET 2**

MCA/MBA/EXECUTIVE M.B.A. (TWO YEARS) ENTRANCE TEST, OCTOBER 2011.

HALL TICKET No. :

Signature of the Candidate **Signature of the Invigilator**

(Name of the Candidate)

Time : $2\frac{1}{2}$ hours Max. Marks : 200

Min. Marks for Pass : 70

INSTRUCTIONS TO CANDIDATES

1. Separate Answer Sheet is supplied to you along with Question Paper Booklet to record your responses. Please read and follow the instructions for marking the responses.
2. Candidate should write the Hall Ticket Number only in the space provided on this page and Answer Sheet. **DO NOT WRITE HALL TICKET NUMBER ANYWHERE ELSE**.
3. Immediately on opening this Question Paper Booklet, please verify for (i) Serial number of the questions (1–200) (ii) The number of pages and (iii) Correct printing.

   IN CASE OF ANY DEFECT, PLEASE REPORT TO THE INVIGILATOR AND ASK FOR REPLACEMENT WITH IN FIVE MINUTES FROM THE COMMENCEMENT OF THE TEST.
4. Each correct answer will be awarded one mark.
5. Adoption of any kind of unfair means at the time of the test or any act of impersonation will result in invalidation of his/her claim for taking the test and will be subjected to prosecution under AP Public Examination (Prevention of Malpractice and Unfair Means) Rules, 1997.
6. Use of Calculators, Mathematical/Log tables, Pagers, any other electronic gadgets and loose sheets of paper is strictly prohibited.
7. **Darken the appropriate circles of 1, 2, 3 or 4 on the Answer Sheet** corresponding to correct answer to the concerned question number in the sheet. If you want to change the answer, erase the wrong answer completely and then darken the correct circle. DARKENING OF MORE THAN ONE CIRCLE AGAINST ANY QUESTION AUTOMATICALLY GETS INVALIDATED.
8. **Rough work should be done only in the space provided for this purpose in Question Paper Booklet.**
9. Once the candidate enters the Examination Hall, he/she shall not be permitted to leave the Hall till the END of the Examination.
10. Ensure that invigilator puts his/her signature in the space provided on Question Paper Booklet and the Answer Sheet. Candidate should sign in the space provided on the Answer Sheet.
11. The candidate should write the Question Paper Booklet number and sign in the space provided in the Nominal Rolls.
12. Return the Answer Sheet and Question Paper Booklet to the Invigilator before leaving the Examination Hall.

COMMON ENTRANCE TEST FOR MCA/MBA/EXECUTIVE MBA
PROGRAMME : 2010–11

Time : $2\frac{1}{2}$ hours Maximum : 200 marks

SECTION A

ANALYTICAL ABILITY

75 Marks

Directions (Q. No. 1-20): A question is followed by data in the form of two statements labeled as I and II. You must decide whether the data given in the statements are sufficient to answer the questions. Using the data make the appropriate choice from (1) to (4) as per the following guidelines:

(a) Mark choice (1) : if statement I alone is sufficient to answer the question;

(b) Mark choice (2) : if statement II alone is sufficient to answer the question;

(c) Mark choice (3) : if both statements I and II are sufficient to answer the question, but neither statement alone is not sufficient;

(d) Mark choice (4) : if both the statements I and II together are not sufficient to answer the questions and additional data is required.

1. What is the average mark of 10 students?

(I) The average mark of 9 of them is 60.

(II) The marks obtained by one of them is 52.

2. If A is the matrix $\begin{bmatrix} 5 & 6 \\ x & 4 \end{bmatrix}$, then what is the value of x?

(I) A is not a symmetric matrix.

(II) A is a singular matrix.

3. What is the volume of the cone?

(I) The height of the cone is 10 cm.

(II) The area of its base is 126 sq.cm.

4. What are the values of the real numbers a and b?

(I) 2 is a root of $x^a - b = 0$.

(II) 2 is a root of $a^4 - \sqrt{a^x} = 0$.

5. What are the values of the real numbers a and b?

(I) $a : b = 7 : 3,\ b > 0$.

(II) $2a : b = 6 : 11,\ a > 0$.

6. Is the positive integer a divisible by 42?

(I) a is not divisible by 7.

(II) a is divisible by 21.

7. Is $(\log_{10} x)^2 = (\log_{10} y)^2$?

(I) $x = y = 10$

(II) $x^2 > y^2$

8. What is the area of the triangle formed by joining the points A, B and C?

(I) $A = (2, 5),\ B = (3, 2)$.

(II) A, B and C lie on a straight line.

9. If x, y and n are positive integers, is $x^n + y^n$ divisible by 2?

(I) $x = 21$

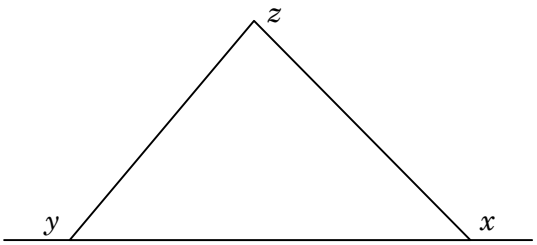
(II) $y = 1001$

10. Is $ab = cd$?

(I) a% of c is equal to b% of d.

(II) b% of c is equal to d% of a.

11. How many degrees is the angle x?



(I) $y = 120°$

(II) $z = 87°$

12. If b, c are positive integers, is $b + c$, a prime number?

(I) b and c are odd

(II) $c = 5b$

13. Each student in a hostel speak Telugu or Kannada or both. What is the number of students who can speak Telugu only?

(I) The total number of students in the hostel is 500 and the number of students who can speak both Telugu and Kannada is 156.

(II) The number of students who can speak Kannada only is 124.

14. Is x the largest among the positive real numbers x, y and z?

(I) $x - y > |z|$

(II) $x + z > 2|y|$

15. How many of A, B, C and D got selected into hockey team?

(I) The statement 'Atleast one of A and B got selected into the team' is true.

(II) The statement 'C and D are selected into the team' is False.

16. Is the triangle ABC right angled?

(I) $\angle A = 2\angle B$

(II) $\angle B = \frac{2}{3}\angle C$

17. Four circles of equal radius are inscribed in a square touching each other. What is the area covered by the four circles?

(I) The perimeter of the square is 32 cm.

(II) The ratio of the sum of the areas of the four circles to that of the square is $\pi : 4$.

18. If x, y, z are distinct integers, is $(x - y)^2 > 0$?

(I) $z = 2x$

(II) $y > x$

19. What is the cost of painting a room which is of the form of a cube?

(I) The base area of the room is 144 sq. ft.

(II) The room has one door of size $6' \times 4'$ and has no windows.

20. If a, b, c are positive integers, is the product abc even?

(I) $a + b + c$ is odd.

(II) $a + c$ is odd.

PROBLEM SOLVING

Directions (Q.21 to Q.35) : In each of the questions numbered 21 to 35 a sequence of numbers or letters that follow a difine pattern is given. Each question has a blank space. This has to be filled by the correct answer from the four given options to complete the sequence without breaking the pattern.

21. 6, 27, 128, ————, 3130
(1) 209 (2) 369 (3) 629 (4) 1031

22. 7, 19, 37, 61, ————, 127
(1) 91 (2) 101 (3) 111 (4) 121

23. 99, 9999, 999999, ————, 99999999999
(1) 9999999 (2) 99999999
(3) 999999999 (4) 99999999999

24. $\frac{3}{4}, \frac{15}{16}, \frac{63}{64}$, ———— $\frac{1023}{1024}$
(1) $\frac{127}{128}$ (2) $\frac{255}{256}$ (3) $\frac{511}{512}$ (4) $\frac{711}{712}$

25. 3, –1, 5, –7, ————, –31
(1) 9 (2) 11 (3) 15 (4) 17

26. DFI, EGJ, FHK, ————, HJM.
(1) GIM (2) GIL (3) HJN (4) HIM

27. $4+\sqrt{13}, 9+\sqrt{10}$, ————, $25+\sqrt{4}$
(1) $14+\sqrt{7}$ (2) $15+\sqrt{7}$ (3) $16+\sqrt{7}$ (4) $19+\sqrt{7}$

28. A9Z, B7Y, CSX, ————, EIV.
(1) D2W (2) D4W (3) D3U (4) D3W

29. 8 : 81 :: 6 : ————
(1) 25 (2) 36 (3) 49 (4) 64

30. 99 : 120 :: ———— : 63
(1) 48 (2) 42 (3) 36 (4) 24

31. 22 : 2222 :: 222 : ————
(1) 22222 (2) 2222 (3) 222222 (4) 2222222

32. LFHW, KEGV, JDFU, ————
(1) ITCE (2) ICET (3) IECT (4) ETCI

33. 11, 101, 1001, ————, 100001, 1000001
(1) 1001 (2) 10001 (3) 10000001 (4) 100000001

34. 2, 3, 5, 7, 11, 13, ————, 19, 23
(1) 14 (2) 15 (3) 16 (4) 17

35. T, W, Z, C, ————
(1) D (2) E (3) F (4) H

Directions (Q.36 to 45) : Find the ODD MAN out.

36. (1) 65 (2) 126 (3) 217 (4) 343

37. (1) $\frac{15}{19}$ (2) $\frac{11}{13}$ (3) $\frac{3}{7}$ (4) $\frac{2}{5}$

38. (1) 345 (2) 143 (3) 567 (4) 789

39. (1) 169 (2) 961 (3) 131 (4) 625

40. (1) 697 (2) 957 (3) 894 (4) 876

41. (1) 96 (2) 64 (3) 48 (4) 78

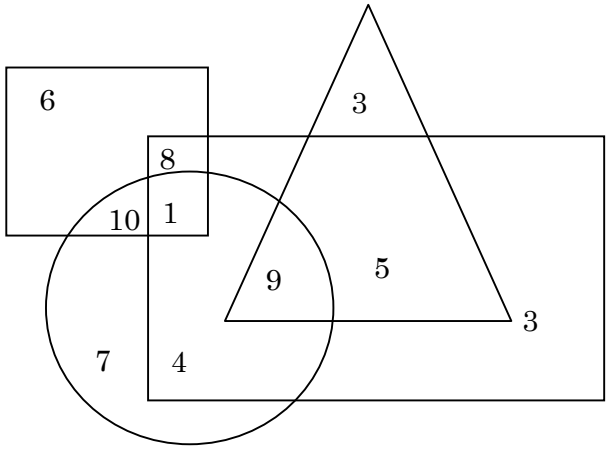
42. (1) DELM (2) BDIJ (3) GHRS (4) PQAB

43. (1) BFH (2) MQS (3) GJL (4) NRT

44. (1) Planet (2) Satellite (3) Sky (4) Star

45. (1) Bat (2) Eat (3) Fat (4) Pot

Directions (Q.46 - 50) : These questions are based on diagram:



Square represents the players who play "Playing Cards". Rectangle represents the players who play "Chess". Circle represents the players who play "Table Tennis" and Triangle represents the players who plays "Squash".

46. The players who plays chess is

(1) 8+1+7+5+3+4 (2) 8+1+9+5+3+4

(3) 8+1+9+2+6+4 (4) 8+1+3+4+5+2

47. The players who play both chess and table tennis but not any other game is

(1) 4 (2) 5 (3) 8 (4) 10

48. The players who play at-most two game is

(1) 1+2+3+4+5+6+9+7 (2) 2+3+4+5+6+7+8+9

(3) 2+3+4+5+7+10+8+9 (4) 2+3+6+7+5+8+10+4

49. The players who play at least two games is

(1) 1+2+3+4+5+8+10+9 (2) 4+5+8+10+9+1

(3) 1+3+4+5+9+8+10 (4) 4+5+7+10+9+1

50. The players who play exactly one game is

(1) 2+3+4+8 (2) 2+3+5+9

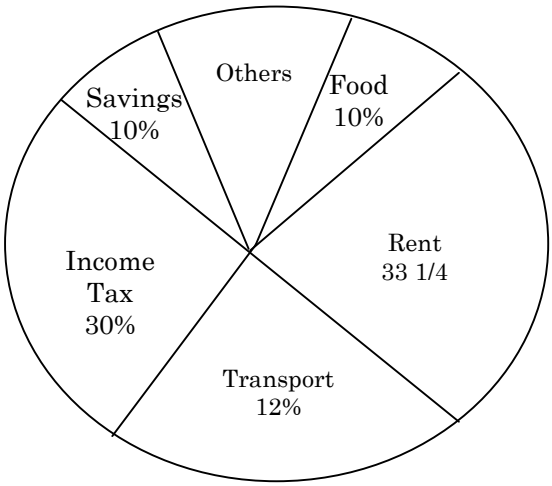
(3) 2+3+6+7 (4) 2+3+10+7

Directions (Q.No. 51 to 55):

Study the following pie chart and answer the questions 51 to 55.

Expenditure pattern of Mr : Jaideep

Monthly salary of Mr. Jaideep is Rs.24,000 in 2006.



51. What is the ratio of the amount meant for others to that of food?

(1) 7:15 (2) 17:30 (3) 15:7 (4) 3:4

52. What is the amount of rent paid by Mr. Jaideep per month?

(1) Rs. 7500 (2) Rs. 8000 (3) Rs. 8500 (4) Rs. 9000

53. What is the angle made by the sector representing the transport expenditure?

(1) 41.8° (2) 42.2° (3) 43.2° (4) 38.2°

54. If Mr. Jaideep's salary increases by 10% and income tax also increases by 10% over its existing rate then what will be his new savings, given that all other components have the same percentage as in 2006?

(1) Rs. 1940 (2) Rs. 2080 (3) Rs. 2240 (4) Rs. 1848

55. Mr. Jaideep could not go to work for six days in June 2006 due to ill health and it was a loss of pay during that period. At the end of that month, what was his net salary after payment of income tax?

(1) Rs. 14800 (2) Rs. 13440 (3) Rs. 12880 (4) Rs. 13220

CODING AND DECODING

Directions (Q.56 to 65) :

Note: If "BDCFMA" and "RSOQMR" coded as follows "STNOQP" and "DZEEFC" then what is the code follows:

56. IHBNJD =
(1) AWQUVO (2) AWQVUO (3) WAQUVO (4) WAUQUO

57. ZYTFKA =
(1) MLGSTM (2) MLGXSN (3) MLGSXN (4) NLGSXM

58. RLODQG =
(1) QDTEYB (2) QDYETB (3) YETBCD (4) YETCBD

59. RAINBW =
(1) AOJNEW (2) AJONEV (3) JOAINV (4) AOJENV

60. SMTWTS =
(1) JGFFZG (2) JGFZFG (3) JFGZFG (4) JZFGFG

61. HORMON =
(1) ZABUBE (2) ZBAUBE (3) ZBAOEB (4) ZUBABE

62. LOVING =
(1) VYTABI (2) VTABIY (3) VATYBI (4) VTBAYI

63. SITUAS =
(1) HNFFVG (2) HFFNVG (3) HNFVFG (4) HFNFVG

64. LDROLW =
(1) BJYYQE (2) EJYYQB (3) BYJYQB (4) BYJQYE

65. GOVMNT =
(1) ZAGTBI (2) ZGATBI (3) ZTEABI (4) ZBTGAI

DATE, TIME AND ARRANGEMENT

66. In a leap year January 26 is Friday, what is the day of August 15 in the same year?
(1) Sunday (2) Friday (3) Thursday (4) Tuesday

67. Sun as the reflection of a wall clock in a mirror. Its image show the times as 2 hours 30 minutes. What is the actual time shows in the clock?
(1) 9 hrs 30 min (2) 10 hrs 30 min
(3) 11 hrs 30 min (4) 7 hrs 30 min

68. How many times the angle between hours hand and minute hand is 180° in 12 hours?
(1) 10 (2) 11 (3) 12 (4) 13

69. Mr. *A* has a son *B* and daughter *C, D* is the wife of *B* and *E* is daughter of *C*. How is *D* related to *E*?
(1) Sister (2) Uncle
(3) Aunt (4) Grand Mother

Directions (70-72):

There are 5 students *A, B, C, D, E* sitting on a Bench. *A* is at extreme left. *B* is second from extreme right. *E* and *B* are sitting together, *E* and *C* are sitting together, *B* and *D* are sitting together.

70. Who is at the extreme right?
(1) *A* (2) *B* (3) *D* (4) *C*

71. Who is at sitting between *A* and *B*?
(1) *C* and *E* (2) *C* and *D* (3) *A* and *E* (4) *B* and *D*

72. Which of the following is a correct sequence from the right end?
(1) *A, C, E* (2) *D, B, E* (3) *E, B, D* (4) *A, B, D*

73. 8 planes *A, B, C, D, E, F, G* and *H* most land at an air port as follows:
i. *F* lands after *E* and before *A*.
ii. *C* lands before *G* and after *B*.
iii. *D* lands after *H* and before *B*.
iv. *H* lands after *A*.
Which plane lands last?
(1) *B* (2) *C* (3) *A* (4) *G*

74. If $a * b = a + b + ab - 1$ then what is the value of $3 * 4 =$
(1) 21 (2) 18 (3) 19 (4) 12

75. $2\Delta 3 = 29,\ 3\Delta 2 = 11,\ 3\Delta 4 = 67$ then $5\Delta 1 =$ ————
(1) 126 (2) 116 (3) 26 (4) 6

SECTION B

MATHEMATICAL ABILITY

75 Marks

76. If $n(A)=3$ and $n(B)=6$ then the least possible elements in $(A\cup B)=$ ————————.

(1) 6 (2) 9 (3) 3 (4) 18

77. In the following which is null set?

(1) $\{x/x\in R,\ x^2-1=0\}$ (2) $\{x/x\in R,\ x^2+1=0\}$

(3) $\{x/x\in R,\ x^2-9=0\}$ (4) $\{x/x\in R,\ x^2=x+2\}$

78. A is a set of childrens which is not null set and R is a relation on A which is defined as $(x,\ y)\in R\Leftrightarrow x$ is a brother of Y then R is ————————.

(1) Reflexive (2) Symmetric (3) Antisymmetric (4) Transitive

79. If $f(1)=1\,m\ f(1+n)=2f(n)+1$ and $n\in N$ then $f(100)=$————————.

(1) 2^{100} (2) 2^{99} (3) $2^{100}-1$ (4) None

80. If $f\left(x+\frac{1}{x}\right)=x^2+\frac{1}{x^2}$ then $f(3)=$————————.

(1) 7 (2) 10 (3) –7 (4) 0

81. If $\alpha,\ \beta$ are the roots of the Q.E. $9x^2+6x+1=0$ then the Q.E. whose roots are $\frac{1}{\alpha},\frac{1}{\beta}$

(1) $x^2+6x+9=0$ (2) $x^2-6x+9=0$

(3) $x^2+63x-27=0$ (4) None

82. If the roots of the Q.E. are multiplied by 3 then the Q.E. is ————————.

(1) $x^3-63x+27=0$ (2) $x^3+63x+27=0$

(3) $x^3+63x-27=0$ (4) None

83. Find the expression x^{30} in the expansion of $\left(3x^2 - \frac{1}{x^2}\right)^{15}$

(1) 3^{-15} (2) 3^{15} (3) 3^{16} (4) None

84. If the expression $x^3 + 7x + 8$ is divided by $x + 2$ find the remainder

(1) 14 (2) –14 (3) 0 (4) None

85. If $A - 2B = \begin{pmatrix} 1 & 5 \\ 3 & 7 \end{pmatrix}$ and $2A - 3B = \begin{pmatrix} -2 & 5 \\ 0 & 7 \end{pmatrix}$ then $B =$ ————————.

(1) $\begin{pmatrix} 4 & 5 \\ 6 & 7 \end{pmatrix}$ (2) $\begin{pmatrix} -4 & 5 \\ 6 & 7 \end{pmatrix}$ (3) $\begin{pmatrix} 4 & -5 \\ 6 & 7 \end{pmatrix}$ (4) None

86. If $A = \begin{pmatrix} 1 & 5 \\ 0 & 1 \end{pmatrix}$ then find A^{-1}

(1) $\begin{pmatrix} 1 & -5 \\ 0 & 1 \end{pmatrix}$ (2) $\begin{pmatrix} 1 & 5 \\ 0 & -1 \end{pmatrix}$ (3) $\begin{pmatrix} -1 & 5 \\ 0 & -1 \end{pmatrix}$ (4) None

87. The value of $\left[(10)^{150} \div (10)^{146}\right]$ is ————————.

(1) 1000 (2) 10000 (3) 100000 (4) 10^6

88. If $(18)^{3.5} \div (27)^{3.5} \times 6^{3.5} = 2^x$ then the value of x is ————————.

(1) 3.4 (2) 4.5 (3) 6 (4) 7

89. If $2^{n+4} - 27^{n+2} = 3$ then n is equal to ————————.

(1) 0 (2) 2 (3) –1 (4) –2

90. $\frac{1}{1 + a^{(n-m)}} + \frac{1}{1 + a^{(m-n)}} =$ ————————.

(1) 0 (2) 1/2 (3) 1 (4) $a^{(m+n)}$

91. If $2^x \times 8^{\frac{1}{5}} = 2^{\frac{1}{5}}$ then $x =$ ————————.

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

92. $\lim_{x \to 0} \sin 5x \cdot \cot 3x =$ ————————.

(1) $\frac{5}{3}$ (2) $\frac{3}{5}$ (3) 0 (4) None

93. Find the distance between the points (1, –3) and (2, 4)

(1) $\sqrt{2}$ (2) 50 (3) $5\sqrt{2}$ (4) $2\sqrt{5}$

94. If (1, 2), (3, 5) and (2, 5) are the vertices of a triangle its centroid is

(1) (3, 4) (2) (2, 4) (3) (4, 2) (4) (6, 3)

95. The equation of the line joining (3, 5) and (1, 1) is

(1) $x + y + 1 = 0$ (2) $x + 2y + 3 = 0$

(3) $x + y = 0$ (4) $2x - y - 1 = 0$

96. The intercepts of $3x + 2y - 6 = 0$ on the x and y axis are respectively.

(1) 2, 2 (2) 3, 2 (3) 2, 3 (4) 3, 3

97. Express $\frac{7\pi}{4}$ radians into degrees.

(1) 120° (2) 135° (3) 140° (4) 160°

98. If $(1 + \tan A)(1 + \tan B) = 2$ then $(A + B) =$ ————————.

(1) 30° (2) 45° (3) 60° (4) 90°

99. If $x = a \tan^n \theta$ and $y = b \sec^n \theta$, eliminate 'θ'

(1) $(x/a)^{2/n} + (y/b)^{2/m} = 1$ (2) $(y/b)^{2/n} - (x/a)^{2/n} = 1$

(3) $\frac{x}{a} + \frac{y}{b} = 1$ (4) None

100. An observer on the top of a cliff 200 m above sea level observes the angles of depression to two ships at anchor to be 45° and 30° respectively. Find the distance between the ships.

(1) $100\sqrt{3}$ m (2) $200(\sqrt{3} - 1)$ m

(3) 100 m (4) None

101. In a simultaneous throw of two dice, what is the probability of getting a total off 7?

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

102. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is a multiple of 3 ?

(1) $\frac{3}{10}$ (2) $\frac{2}{20}$ (3) $\frac{2}{5}$ (4) $\frac{1}{2}$

103. One card is drawn from a pack of 52 cards. What is the probability that the card drawn is either a red card or a king?

(1) $\frac{1}{2}$ (2) $\frac{6}{13}$ (3) $\frac{7}{13}$ (4) $\frac{27}{52}$

104. Two cards are drawn from a pack of 52 cards. The probability that either both are red is both is kings, is ————————.

(1) $\frac{7}{13}$ (2) $\frac{3}{26}$ (3) $\frac{63}{221}$ (4) $\frac{55}{221}$

105. A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?

(1) $\frac{10}{21}$ (2) $\frac{11}{21}$ (3) $\frac{2}{7}$ (4) $\frac{5}{7}$

106. Find the derivative of $\sqrt{5x+6}$

(1) $\frac{5}{\sqrt{5x+6}}$ (2) $\frac{5}{2\sqrt{5x+6}}$ (3) $\frac{5}{3\sqrt{5x+6}}$ (4) None

107. If the mean of $x-2$, $x-3$ and $x+5$ is 6 then the value of x is

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

108. The geometric mean of a natural number and its reciprocal is

(1) Zero (2) One

(3) The number itself (4) Can't say

109. For a symmetric distribution which of the following is true?

(1) Mode ≠ Median ≠ Mean (2) Mode = Median = Mean

(3) Mean = Median ≠ Mode (4) None

110. The arithmetic mean of two numbers is 9 and their harmonic mean is 4. Their geometric mean is

(1) 4 (2) 6 (3) 9 (4) 36

111. $\dfrac{\left(p+\frac{1}{q}\right)^p\left(p-\frac{1}{q}\right)^q}{\left(q+\frac{1}{p}\right)^p\left(q-\frac{1}{p}\right)^q}=\left(\dfrac{p}{q}\right)^x$ then $x =$

(1) p (2) q (3) $p+q$ (4) $p-q$

112. $\dfrac{(625)^{6.25}(25)^{2.6}}{(625)^{6.75}(5)^{1.2}} =$

(1) 45 (2) 40 (3) 35 (4) 25

113. The least of the numbers $\sqrt[3]{4}, \sqrt[4]{5}, \sqrt[4]{7}, \sqrt[3]{8}$

(1) $\sqrt[3]{8}$ (2) $\sqrt[4]{7}$ (3) $\sqrt[3]{4}$ (4) $\sqrt[4]{5}$

114. $(2.7)^3-(1.6)^3-(1.1)^3 =$ ——————.

(1) 0 (2) 4.572 (3) 9.504 (4) 14.256

115. $\sqrt[3]{7}\times\sqrt{2} =$

(1) $\sqrt{14}$ (2) $\sqrt[3]{14}$ (3) $\sqrt[6]{181}$ (4) $\sqrt[6]{392}$

116. $\sqrt{5-4\sqrt{14}}$ = is

(1) $\sqrt{8}+\sqrt{7}$ (2) $\sqrt{8}-\sqrt{7}$ (3) $\sqrt{9}+\sqrt{6}$ (4) $\sqrt{9}-\sqrt{6}$

117. If $x = \sqrt{23} - \sqrt{12}$, $y = \sqrt{29} - \sqrt{7}$ then

(1) $2x = y$ (2) $x > y$ (3) $x < y$ (4) $x = y$

118. The 15th term of the A.P. with 1st term –2 and common difference 2 is

(1) 23 (2) 24 (3) 25 (4) 26

119. If the 3rd and 5th terms of a G.P. are 12 and 48 respectively then the 2nd term in it is ————————.

(1) $\frac{1}{2}$ (2) 6 (3) 4 (4) 8

120. If $\sin\theta$ and $\cos\theta$ are the roots of equation $px^2 + qx + r = 0$, then $q^2 - p^2 =$

(1) $2pr$ (2) pr (3) $2r$ (4) $2p$

121. $(x+1)^2 - (x-1)^2 = 3;\ x =$

(1) 1/4 (2) –1/4 (3) 3/4 (4) –3/4

122. The area of the triangle with vertices (–4, 2), (3, –1) and (2, 3) is

(1) 10 (2) 12 (3) 14.5 (4) 12.5

123. The equation of the line making equal intercepts on coordinate axes and passing through (2, 3) is

(1) $x + y = 1$ (2) $x + y = 5$ (3) $x + y = 4$ (4) $x + y + 1 = 0$

124. The equation of the perpendicular bisector of AB is $x + 3y = 16$ if $B = (3, 1)$ then A is ————————.

(1) (5, 6) (2) (5, 7) (3) (6, 5) (4) (7, 5)

125. $\cos 1^0 \cos 2^0 \cos 3^0 \ldots \cos 179^0 =$ ————————.

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

126. $\sin\theta + \sin^2\theta = 1$, $\cos^2\theta + \cos^4\theta =$ ————————.

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

127. If $\sec\theta + \tan\theta = 4$ then $\sec\theta - \tan\theta =$ ————————.

(1) –4 (2) +1/4 (3) 4 (4) –1/4

128. A tower is of height 100 feet. If 2 boys standing on both sides of the tower observes the top with angles of elevation 30° and 45°, the distance between them (in feets) is

(1) 100 (2) $100\sqrt{3}$ (3) $100(\sqrt{3}+1)$ (4) $100\sqrt{2}$

129. If A and B are matrices such that $AB = B$, $BA = A$, then $A^2 + B^2 =$ ————————.

(1) $A - B$ (2) $A + B$ (3) $A^2 - B^2$ (4) Null matrix

130. If the coefficient of x^7 and x^8 in the expansion of $\left(3 + \frac{x}{2}\right)^n$ are equal then $n =$

(1) 56 (2) 52 (3) 48 (4) 44

131. If the term independent of x in $\left(\sqrt{x} + \frac{k}{x^2}\right)^{10}$ is 405 then $k =$ ————————.

(1) 2 (2) ± 3 (3) ± 4 (4) 5

132. A, B and C respectively denotes the set of the letters in the word "FOLLOW", "WOLF" and "FLOW" then

(1) $B = C, A \neq B$ (2) $A = B, B \neq C$

(3) $A = B = C$ (4) $A \neq B$ and $B \neq C$

133. If $n(s)$ denotes then number of elements in s, $n(A) = 20$, $n(B) = 40$, and $n(A \cup B) = 50$ then $n(A \cap B) = ?$

(1) 30 (2) 20 (3) 10 (4) 8

134. Let N denote the set of positive integers the relation $\leq n\ N$ is

(1) an equivalence relation (2) reflexive but not symmetric

(3) symmetric but not reflective (4) neither reflexive nor symmetric

135. If P and Q are two statements then the symbolic form of "p" and not "q" is

(1) $p \wedge q$ (2) $p \vee q$ (3) $p \wedge \square q$ (4) $p \vee \square q$

136. If p and q are two statements a tautology among the following is

(1) $p \vee (\square q)$ (2) $p \wedge (\square q)$ (3) $(p) \wedge \square q$ (4) $p \wedge \square q$

137. $\{x \in R : |x-1| = 3\} =$ ——————.

(1) $\{x \in R : -2 < x < y\}$ (2) $\{x \in R : -2 \leq x \leq y\}$

(3) $\{-2, 4\}$ (4) $\{-1, 0, 1, 2, 3\}$

138. The number of solutions of $x^2 - 7|x| + 12 = 0$ is

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

139. $\lim_{x \to 0} \frac{x}{\sqrt{1+x} - \sqrt{1-x}} =$

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

140. $\frac{d}{dx}\{x^3 + \sin x\} =$

(1) $3x^2 + \sin x$ (2) $3x + \cos x$ (3) $3x^2 + \cos x$ (4) $x^2 + \cos x$

141. In a distribution of 6, 4, 8, 3 occur with frequencies 4, 2, 5, 7 respectively then the arithmetic mean is

(1) 5 (2) 5.25 (3) 6 (4) 6.25

142. The mean and median of a unimodal grouped data are 72.5 and 73.9 respectively. The mode is

(1) 66.7 (2) 77.6 (3) 67.6 (4) 76.7

143. The standard deviation of –3, –2, –1, 0, 1, 2, 3 is

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

144. If a, g and h respectively denote the Arithmetic Mean, Geometric Mean and Harmonic Mean of data then

(1) $a = g = h$ (2) $a \geq g \geq h$ (3) $g \geq h \geq a$ (4) $g = ah$

145. If the average of 1, 4, 9, x, 25, 36 and 49 is 20 then x = ————————.

(1) 40 (2) 25 (3) 16 (4) 9

146. The probability of getting at least two heads when an unbiased coin is tossed thrice is

(1) $\frac{1}{8}$ (2) $\frac{1}{4}$ (3) $\frac{1}{2}$ (4) $\frac{7}{8}$

147. A natural number is choosen at random from 1 to 50. The probability of getting a prime number is

(1) 0.1 (2) 0.2 (3) 0.3 (4) 0.7

148. The probability of drawing a card which is a spade or king from a well shuffeled pack of cards is

(1) $\frac{36}{52}$ (2) $\frac{35}{52}$ (3) $\frac{17}{52}$ (4) $\frac{16}{52}$

149. The probability of getting at least one 6 when two unblased dice are thrown together.

(1) $\frac{10}{36}$ (2) $\frac{11}{36}$ (3) $\frac{12}{36}$ (4) $\frac{13}{36}$

150. If A and B are events such that $P(A) = 0.3$, $P(B) = 0.2$ and $P(A \cap B) = 0.1$ then $P(A \cup B)$ = ————————.

(1) 0.6 (2) 0.4 (3) 0.2 (4) 0

SECTION C

COMMUNICATION ABILITY

50 Marks

PART I

Directions (151 to 155) : Read the following passages and answer the questions that follow:

The perpetuation of the status hierarchy based on the concept of men as 'superior' and women as 'inferior' has made many women subservient, self-effacing and fatalist. This hierarchy is still being maintained in our male-dominated society. Even now a woman is defined not in terms of her performance but in relation to man. She is projected as weak, passive, home-oriented woman, less intelligent and less capable than man, and thus enshrined in mythology, symbolism and stereotype ideals. Because of such discrimination in treatment from childhood, women develop a deep seated tendency to under-estimate their own talents and powers and this complex has become a stumbling block in their aspiring for the economic emancipation and equal social status alongside men.

One of the basic requirements for entrepreneurship is self-confidence. Although women are as qualified as men to succeed as entrepreneurs, they suffer from two distinct disadvantages. The first is the initial lack of confidence in their own abilities. The second disadvantage is society's lack of confidence in women's ability.

151. The hierarchical order of a male-dominated society leads to

(1) the promotion of a feeling of inferiority in men and women.

(2) the lack of confidence in their abilities as built up in women by themselves and by society.

(3) the lack of confidence in women's abilities as developed by women, as against society's confidence in them.

(4) Society's lack of confidence in women as against women's self-confidence.

152. Women's diffidence and inferiority, as the passage cites, have resulted in

(1) their gaining of equal social status with men.

(2) their seeking of economic emancipation.

(3) their under-estimation of their talents.

(4) their entrepreneurial ability.

153. According to this passage, even now a woman is considered

(1) strong (2) active

(3) less capable than men (4) intelligent

154. A quality necessary for entrepreneurship is

(1) superiority complex (2) self-confidence

(3) inferiority complex (4) stereotypical ideals.

155. A women is defined

(1) in relation to man (2) in terms of performance

(3) as superior (4) in terms of efficiency

Read the passage and answer questions (156 to 160):

Genetics is a science about to become a technology. In this century, developments in genetics will be accelerating. This technology will lead to the ability to design plants and animals to perform human functions. In agriculture, scientists will be able to produce plants which have improved photosynthetic efficiency, minimum water requirements, self-fertilising characteristics and a desired spectrum of nutrient qualities. In mining, organisms will metabolize desired metals and thus concentrate them for later 'harvesting'. The production of pharmaceuticals, micro-organisms will be used as factory workers to produce chemicals normally found only in natural body and plant processes.

Finally, in medicine, scientists will intervene in the process by which genetic disease - such as sickle cell anaemia. Tay Sachs diseases, and mongolism - are passed from parents to progeny, to cure these diseases before conception. Ultimately this science of genetics, which will prove so important, will give us the ability to design animals, including ourselves.

156. In the Pharmaceutical industry

(1) factory workers use micro-organisms

(2) micro organisms use factory workers

(3) micro-organisms are used as factory workers

(4) factory workers produce chemicals

157. One of the uses of genetics is that it

(1) helps in the cure of genetic diseases

(2) helps in accelerating technology to grow into a science

(3) helps in the mining of metals

(4) converts metals into manures

158. In the field of agriculture, genetics performs the function of
   (1) reducing photosynthetic activity
   (2) increasing water requirements
   (3) promoting self-fertilizing characteristics
   (4) reducing the nutritional quality of the product harvested

159. Genetics will help man by
   (1) replacing robots with animals
   (2) designing healthier people
   (3) designing technologies to take over man's work
   (4) making man's future safe

160. Genetically designed animals will be able to
   (1) outperform man
   (2) takeover human functions
   (3) reduce man's dependence on technology
   (4) provide the desired spectrum of nutrient qualities

Read the passage and answer questions (161 to 165):

There is a great scope for educating people to maximize efficient use of resources. For instance, 5 per cent of fuel used for vehicles can be saved if drivers are given proper training in correct and energy efficient driving habits : don't press the accelerator unnecessarily, avoid braking suddenly, slow down earlier, etc. But dies a normal driver know that these factors are connected with the thermodynamics of engines and fuel burning? Similarly, if the Stove's flame is kept at a level that will prevent it lapping around the sides of the vessel and just be under the pot, though it may take a few minutes more to cook food, there will be a considerable saving of precious gas. Such wastage exacts' heavy price on the economy. Marketing communication skills can be deployed very effectively to impart continual training to our workface and curb such wastage. That will be an excellent service industry itself.

161. An excellent service industry can grow out of
   (1) motor vehicle industry
   (2) regular training to workforce
   (3) our economy
   (4) a study of the wastage phenomenon

162. The thermodynamics of engine and fuel burning is

(1) common knowledge among drivers

(2) not normally known to drivers

(3) entirely unknown to drivers

(4) well known to drivers

163. A level flame

(1) cooks food faster (2) wastes gas

(3) saves gas (4) hardly cooks food

164. Energy efficient driving habits result in

(1) increased life of vehicles (2) less repairs

(3) high speed driving (4) fuel efficiency

165. Education people is essential for

(1) making them efficient

(2) increasing their efficiency

(3) mobilization of resources

(4) increasing their efficiency in using resources

PART II

Choose the correct meaning for the word (Q.166 to 170):

166. CELIBATE

(1) Unmarried (2) Leafy (3) Heavenly (4) Joyous

167. PENDULOUS

(1) Heavy (2) Hanging down loosely

(3) Tawdry (4) Contrite

168. BIBULOUS

(1) Addicted to drink (2) talkative

(3) well-dressed (4) frothy

169. NOMADIC

(1) Wandering (2) Fierce

(3) Equestrian (4) Lawless

170. LEVITY

(1) Frivolity (2) Increase

(3) Fermentation (4) Forgetfulness

Directions (Q.171 to 175) : Fill in the blank choosing correct answer:

171. The magistrate ———————— every word she said.

(1) got on (2) got in

(3) got over (4) got down

172. The epidemic ———————— whose families.

(1) wiped off (2) wiped out

(3) wiped up (4) wiped over

173. ———————— time, he came to know his mistake.

(1) on account of (2) in course of

(3) in the event of (4) during

174. ———————— her sincere efforts, she could not get through the examination.

(1) despite (2) inspite

(3) owing to (4) due to

175. Sindhu was greatly amused ———————— the performance.

(1) by (2) on (3) at (4) in

PART III

Directions (Q.176 to 180) : Fill in the blanks with the appropriate phrase/verb/preposition.

176. Employees who have twenty-five of service become entitled ———————— a person.

(1) of (2) on (3) from (4) to

177. I ———————— some old friends when I was in Acharya Nagarjuna University last year.

(1) comes across (2) come across

(3) comes out (4) came out

178. I have some letters which I must ———————— before I leave to night.

(1) clear away (2) clear off

(3) clear up (4) clear out

179. The Hindustan times aspires to have a million readers ———————— next year.

(1) by (2) till (3) until (4) through

180. How are you ———————— with your work?

(1) get alone (2) getting alone

(3) get off (4) getting in

Directions (Q.181 to 190) : Fill in the blank choosing the correct word:

181. I am grateful ———————— my grand father for teaching me mathematics.

(1) to (2) off (3) for (4) by

182. The writer accuses national government ———————— resorting to violence.

(1) of (2) for (3) with (4) on

183. Don't ———————— when somebody else in talking.

(1) cut out (2) cut off (3) cut on (4) cut in

184. He talks as though he ———————— where she was.

(1) knows (2) has known

(3) knew (4) had known

185. Hardly had the performance began ———————— the lights went out.

(1) before (2) than (3) when (4) none

186. She filed a lawsuit to stop the ———————— of child labour.

(1) expertise (2) extinction

(3) exploitation (4) extravagance

187. In order to ———————— natural gas they installed extra insulation.

(1) consent (2) constant (3) contract (4) conserve

188. Monks and nuns are supposed to lead a ———————— life.
(1) austere (2) prodigal
(3) gratuitous (4) presumptuous

189. Several ———————— for global warming have been recently suggested.
(1) principal (2) priorities (3) privileges (4) hypotheses

190. He is ———————— of her victory in the elocution contest.
(1) zealous (2) envy (3) pride (4) jealous

PART IV

Directions (Q. 191 to 200) : Choose the correct answer.

191. An Actuary is
(1) One who presents himself
(2) One who projects himself
(3) One who works in a sanctuary
(4) One who makes calculations connected with insurance

192. CRR stands for
(1) Cash Reserve Ratio
(2) Cumulative Reserve Ratio
(3) Credit Requirement Ratio
(4) Compulsory Reserve Ratio

193. MOU is the abbreviation of
(1) Management of undertaking
(2) Monetary output unit
(3) Memorandum of understanding
(4) Marketing of unsaleables

194. MS-Excel is used for
(1) Word processing
(2) Tabulation and number crunching
(3) Spell check
(4) Website creation

195. GUI is the abbreviation of
   (1) Groupware User Interface
   (2) Graphic User Interface
   (3) Graphics User Identification
   (4) Graphic Universal Imaging

196. An Icon is
   (1) A small picture on a display screen
   (2) An application software
   (3) A back up system
   (4) A computer designed car

197. IPO is the abbreviation of
   (1) Initial Private Offering
   (2) Important Public Organisation
   (3) Initial Public Offering
   (4) Important Public Offering

198. Patent means
   (1) The sole right to manufacture and sell product
   (2) A negotiable instrument
   (3) An exclusive trade right
   (4) A design

199. A commonly accepted proper behaviour in the Net is called
   (1) Net manners (2) Web manners
   (3) Net Protocols (4) Netiquette

200. CAD stands for
   (1) Computer Aided Design
   (2) Computer Arithmetic Design
   (3) Computer Analogue Design
   (4) Computer Architecture Development

ROUGH WORK

ROUGH WORK

HALL TICKET No. : | | | | | | | | | | | | | | **Sl. No.**

ANSWER SHEET

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	① ② ③ ④	51	① ② ③ ④	101	① ② ③ ④	151	① ② ③ ④
2	① ② ③ ④	52	① ② ③ ④	102	① ② ③ ④	152	① ② ③ ④
3	① ② ③ ④	53	① ② ③ ④	103	① ② ③ ④	153	① ② ③ ④
4	① ② ③ ④	54	① ② ③ ④	104	① ② ③ ④	154	① ② ③ ④
5	① ② ③ ④	55	① ② ③ ④	105	① ② ③ ④	155	① ② ③ ④
6	① ② ③ ④	56	① ② ③ ④	106	① ② ③ ④	156	① ② ③ ④
7	① ② ③ ④	57	① ② ③ ④	107	① ② ③ ④	157	① ② ③ ④
8	① ② ③ ④	58	① ② ③ ④	108	① ② ③ ④	158	① ② ③ ④
9	① ② ③ ④	59	① ② ③ ④	109	① ② ③ ④	159	① ② ③ ④
10	① ② ③ ④	60	① ② ③ ④	110	① ② ③ ④	160	① ② ③ ④
11	① ② ③ ④	61	① ② ③ ④	111	① ② ③ ④	161	① ② ③ ④
12	① ② ③ ④	62	① ② ③ ④	112	① ② ③ ④	162	① ② ③ ④
13	① ② ③ ④	63	① ② ③ ④	113	① ② ③ ④	163	① ② ③ ④
14	① ② ③ ④	64	① ② ③ ④	114	① ② ③ ④	164	① ② ③ ④
15	① ② ③ ④	65	① ② ③ ④	115	① ② ③ ④	165	① ② ③ ④
16	① ② ③ ④	66	① ② ③ ④	116	① ② ③ ④	166	① ② ③ ④
17	① ② ③ ④	67	① ② ③ ④	117	① ② ③ ④	167	① ② ③ ④
18	① ② ③ ④	68	① ② ③ ④	118	① ② ③ ④	168	① ② ③ ④
19	① ② ③ ④	69	① ② ③ ④	119	① ② ③ ④	169	① ② ③ ④
20	① ② ③ ④	70	① ② ③ ④	120	① ② ③ ④	170	① ② ③ ④
21	① ② ③ ④	71	① ② ③ ④	121	① ② ③ ④	171	① ② ③ ④
22	① ② ③ ④	72	① ② ③ ④	122	① ② ③ ④	172	① ② ③ ④
23	① ② ③ ④	73	① ② ③ ④	123	① ② ③ ④	173	① ② ③ ④
24	① ② ③ ④	74	① ② ③ ④	124	① ② ③ ④	174	① ② ③ ④
25	① ② ③ ④	75	① ② ③ ④	125	① ② ③ ④	175	① ② ③ ④
26	① ② ③ ④	76	① ② ③ ④	126	① ② ③ ④	176	① ② ③ ④
27	① ② ③ ④	77	① ② ③ ④	127	① ② ③ ④	177	① ② ③ ④
28	① ② ③ ④	78	① ② ③ ④	128	① ② ③ ④	178	① ② ③ ④
29	① ② ③ ④	79	① ② ③ ④	129	① ② ③ ④	179	① ② ③ ④
30	① ② ③ ④	80	① ② ③ ④	130	① ② ③ ④	180	① ② ③ ④
31	① ② ③ ④	81	① ② ③ ④	131	① ② ③ ④	181	① ② ③ ④
32	① ② ③ ④	82	① ② ③ ④	132	① ② ③ ④	182	① ② ③ ④
33	① ② ③ ④	83	① ② ③ ④	133	① ② ③ ④	183	① ② ③ ④
34	① ② ③ ④	84	① ② ③ ④	134	① ② ③ ④	184	① ② ③ ④
35	① ② ③ ④	85	① ② ③ ④	135	① ② ③ ④	185	① ② ③ ④
36	① ② ③ ④	86	① ② ③ ④	136	① ② ③ ④	186	① ② ③ ④
37	① ② ③ ④	87	① ② ③ ④	137	① ② ③ ④	187	① ② ③ ④
38	① ② ③ ④	88	① ② ③ ④	138	① ② ③ ④	188	① ② ③ ④
39	① ② ③ ④	89	① ② ③ ④	139	① ② ③ ④	189	① ② ③ ④
40	① ② ③ ④	90	① ② ③ ④	140	① ② ③ ④	190	① ② ③ ④
41	① ② ③ ④	91	① ② ③ ④	141	① ② ③ ④	191	① ② ③ ④
42	① ② ③ ④	92	① ② ③ ④	142	① ② ③ ④	192	① ② ③ ④
43	① ② ③ ④	93	① ② ③ ④	143	① ② ③ ④	193	① ② ③ ④
44	① ② ③ ④	94	① ② ③ ④	144	① ② ③ ④	194	① ② ③ ④
45	① ② ③ ④	95	① ② ③ ④	145	① ② ③ ④	195	① ② ③ ④
46	① ② ③ ④	96	① ② ③ ④	146	① ② ③ ④	196	① ② ③ ④
47	① ② ③ ④	97	① ② ③ ④	147	① ② ③ ④	197	① ② ③ ④
48	① ② ③ ④	98	① ② ③ ④	148	① ② ③ ④	198	① ② ③ ④
49	① ② ③ ④	99	① ② ③ ④	149	① ② ③ ④	199	① ② ③ ④
50	① ② ③ ④	100	① ② ③ ④	150	① ② ③ ④	200	① ② ③ ④

Signature of the Candidate

Signature of the Invigilator