

**PAPER 3 : QUANTITATIVE APTITUDE**

1. Purchasing power of money is
  - (a) Inversely proportional to price index number
  - (b) Directly proportional to price index number
  - (c) Both (a) and (b)
  - (d) None of these
  
2. Age of applicants for life insurance and the premium of insurance-correlation are :
  - (a) positive
  - (b) negative
  - (c) zero
  - (d) None
  
3. The area of a normal Curve is
  - (a) 90%
  - (b) 95%
  - (c) Unity
  - (d) Infinity
  
4. When the two curves of ogive intersect, the point of intersection provides:
  - (a) First Quartile
  - (b) Second Quartile
  - (c) Third Quartile
  - (d) Mode
  
5. Sum of square deviation from mean for any set of observation is -
  - (a) Negative
  - (b) Minimum
  - (c) Zero
  - (d) None of these
  
6. Laspeyre's index is based on
  - (a) Base Year Quantities
  - (b) Current Year Quantities
  - (c) Average of base and current year Quantity
  - (d) None of these
  
7. \_\_\_\_\_ is the entire upper part of the table which includes columns and sub-column and unit of measurement.
  - (a) Stub
  - (b) Box-head
  - (c) Body
  - (d) Caption
  
8. Which is true from the following.
  - (a)  $Q.D < M.D. < S.D$
  - (b)  $Q.D > M.D > S.D$
  - (c)  $Q.D < S.D < M.D$
  - (d)  $Q.D > S.D > M.D$

9. Standard Deviation is independent of change of \_\_\_\_\_ .
- Origin
  - Scale
  - Both
  - None of these
10. If two variable are uncorrelated then regression lines are.
- Parareel
  - Perpendicular
  - Coincide
  - $45^\circ$  Angled
11. Correlation coefficient between x and y is equal to \_\_\_\_\_ of regression coefficients
- A.M
  - G.M
  - H.M
  - None of these
12. To check the consistency of two data which measure of dispersion will be used-
- QD
  - SD
  - CV
  - None of these
13. The effective annual rate of interest corresponding to a nominal rate of 6% per annum payable half – yearly is
- 6.06%
  - 6.07%
  - 6.08%
  - 6.09%
14. There are 7 Men and 3 Ladies. Find the number of ways in which a committee of 6 can be formed of them if the committee is to include at least two ladies?
- 160
  - 180
  - 150
  - None
15. If  $A = \{a, b, c\}$  and  $R = \{(a, a), (a, b), (b, c), (b, b), (c, c), (c, a)\}$  is a relation on A, then which one of the following is correct?
- R is reflexive, symmetric and transitive
  - R is reflexive and symmetric, but not transitive
  - R is reflexive and transitive, but not symmetric
  - R is reflexive, but neither symmetric nor transitive

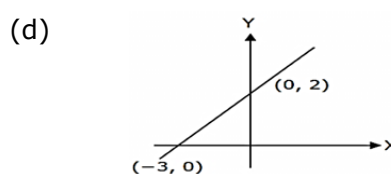
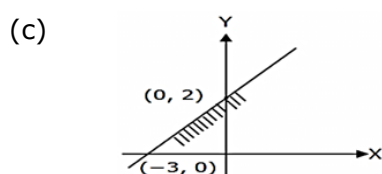
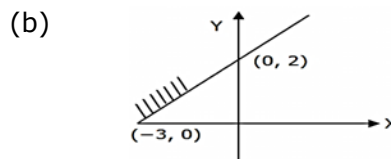
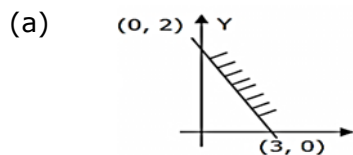
16. The mean proportion between  $\frac{a-b}{a+b}$  and  $\frac{a^2 b^2}{a^2 - b^2}$  is:-
- (a)  $\frac{ab}{a-b}$   
 (b)  $\frac{ab}{a+b}$   
 (c)  $\frac{a-b}{ab}$   
 (d)  $\frac{a+b}{ab}$
17. The number of straight lines can be formed out of 10 point of which 7 are collinear
- (a) 24  
 (b) 21  
 (c) 25  
 (d) 26
18. Which one of the following cannot be determined by graphic method-
- (a) Mean  
 (b) Median  
 (c) Quartiles  
 (d) Mode
19. If  $\alpha, \beta$  are roots of  $x^2 + x + 2 = 0$ , then the value of  $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$  :
- (a)  $\frac{-2}{3}$   
 (b)  $\frac{-3}{4}$   
 (c)  $\frac{-3}{2}$   
 (d) None of these
20. If  $a = 1 + \frac{1}{2} + \frac{1}{2^2} + \frac{1}{2^3} + \dots - \infty$   
 $b = 1 + \frac{1}{6} + \frac{1}{6^2} + \frac{1}{6^3} + \dots - \infty$   
 Then the value of ab is:-
- (a)  $\frac{5}{12}$

- (b)  $\frac{5}{6}$
- (c)  $\frac{12}{5}$
- (d) 2
21. Which is always true for distinct observations-
- (a) Standard Deviation =  $\sqrt{\frac{\sum x^2}{n}}$
- (b) Standard Deviation =  $\sum x^2 + n^2$
- (c)  $\sum x^2 = n(\sigma^2 + \bar{x}^2)$
- (d)  $\bar{x}^2 = \sigma^2 + n^2$
22. Mean of binomial distribution = 3 and variance = 4 find the value of n-
- (a) 8
- (b) 9
- (c)  $\frac{4}{3}$
- (d) Not valid
23.  $(A \cup B)'$  is equal to:-
- (a) A-B
- (b) B-A
- (c)  $A' \cup B'$
- (d)  $A' \cup B$
24. In an organization Employer required maximum ten employees. X and Y are numbers of male and female respectively then which inequality shows right relation.
- (a)  $x + y = 10$
- (b)  $x + y \leq 10$
- (c)  $x + y \geq 10$
- (d)  $x \geq 10$
25. The condition that one of  $ax^2 + bx + c = 0$  the roots of is thrice the other is :-
- (a)  $3b^2 = 16ac$
- (b)  $b^2 = 9ac$
- (c)  $3b^2 = -16ac$
- (d)  $b^2 = -9ac$

## Mittal Commerce Classes

26. The difference between compound interest and simple interest on a sum for 2 years at 8 per cent is Rs. 768. The sum is  
 (a) Rs. 1,00,000  
 (b) Rs. 1,10,000  
 (c) Rs. 1,20,000  
 (d) Rs. 1,70,000
27. If set  $A = \{1,2,3\}$ , then what is the power set of A ?  
 (a)  $\{ \{1\}, \{2\}, \{3\}, \{1,2\}, \{1,3\}, \{2,3\}, \{1,2,3\} \}$   
 (b)  $\{ \phi, \{1\}, \{2\}, \{3\}, \{1,2\}, \{1,3\}, \{2,3\} \}$   
 (c)  $\{ \phi, \{1\}, \{2\}, \{3\}, \{1,2\}, \{1,3\}, \{2,3\}, \{1,2,3\} \}$   
 (d) None
28. The simple interest on a certain sum of money for  $2\frac{1}{2}$  year at 12% per annum is Rs. 40 less than the simple interest on the same sum for  $3\frac{1}{2}$  years at 10% per annum.  
 Find the sum.  
 (a) 1,000  
 (b) 800  
 (c) 900  
 (d) None of these
29. If 5<sup>th</sup> and 12<sup>th</sup> terms of an AP are 14 and 35 respectively, find the first term of AP.  
 (a) 4  
 (b) 2  
 (c) 1  
 (d) 3
30. How many words, with or without meaning can be formed by using all the letters of the word "MACHINE", so that the vowels occurs only the odd positions ?  
 (a) 1440  
 (b) 720  
 (c) 576  
 (d) 640

31. Which option shows inequality  $-2x + 3y \geq 6$



32. Calculate the sum of infinite geometric progression  $1, -3, 9, -27, \dots \infty$  :
- (a)  $\frac{1}{4}$
- (b)  $\frac{3}{4}$
- (c)  $-\frac{1}{4}$
- (d) does not exist
33. What is the present value of Rs. 1 to be received after two years compounded annually at 10% interest rate ?
- (a) 0.73
- (b) 0.60
- (c) 0.90
- (d) 0.83
34. A sum of money amounts to Rs. 5,200 in 5 years and to Rs. 5,680 in 7 years at simple interest. The rate of interest per annum is :-
- (a) 3%
- (b) 4%
- (c) 5%
- (d) 6%
35. The value of  $\frac{1}{\log_3 60} + \frac{1}{\log_4 60} + \frac{1}{\log_5 60}$  is :-
- (a) 0
- (b) 1
- (c) 5
- (d) 60
36. A bag contains coins of Rs. 1, 50 paise and 25 paise in the ratio 4:5:6. If the total amount in the bag is Rs. 120, then the number of coins of 25 paise, is :-
- (a) 60
- (b) 75
- (c) 90
- (d) 96
37. How many different words can be formed with the letters of the word 'MISSISSIPPI'?
- (a) 36450
- (b) 35460
- (c) 34560
- (d) 34650

38. A sum compounded annually become  $\frac{25}{16}$  times of itself in 2 years, the rate of interest per annum is-
- (a) 5%
  - (b) 12.5%
  - (c) 25%
  - (d) 50%
39. A bag contains 4 red, 3 black and 2 white balls, in how many ways 3 balls can be drawn from this bag so that they include at least one black ball?
- (a) 64
  - (b) 46
  - (c) 85
  - (d) None of the above
40. If  $A = \{1,2,3,4,5,6,7,8,9\}$   
 $B = \{1,3,4,5,7,8\}$ ;  $C = \{2,6,8\}$  then find  $(A - B) \cup C =$
- (a)  $\{2,6\}$
  - (b)  $\{2,6,8\}$
  - (c)  $\{2,6,8,9\}$
  - (d) None of these
41. If  $\log_9^x + \log_3^x = \frac{3}{2}$  then x is
- (a) 0
  - (b) 1
  - (c)  $\frac{9}{4}$
  - (d) 3
42. 5 chairs and 3 tables cost of Rs. 350. and 3 Chairs and 5 tables cost Rs. 370. What is the cost of the one table and two chairs?
- (a) Rs. 130
  - (b) Rs. 120
  - (c) Rs. 150
  - (d) Rs. 140
43. If a,b,c are in A.P. then (b+c), (c+a), (a+b) are in \_\_\_\_\_
- (a) AP
  - (b) GP
  - (c) HP
  - (d) None
44. The number of diagonals in a polygon of 6 sides :
- (a) 9
  - (b) 8
  - (c) 6
  - (d) 12

## Mittal Commerce Classes

45. If  $A = \{1, 2, 3, 4, 5\}$  and  $B = \{6, 7, 8\}$ , then cardinal number of  $A \times B$  is:  
 (a) 15  
 (b) 5  
 (c) 3  
 (d) 8
46. Two lines of regression are given by  $5x+7y-22=0$  and  $6x+2y-22=0$ . If the variance of  $y$  is 15 find the standard deviation of  $x$ .  
 (a) 2.646  
 (b) 6.246  
 (c) 7.612  
 (d) 3.646
47. If the maximum and minimum values of 10 observations are 40 and 10 then coefficient of range is  
 (a)  $\frac{5}{3}$   
 (b)  $\frac{3}{5}$   
 (c) 30  
 (d) none of these
48. What is the G.M. for the numbers 2,4,8,16,32,64?  
 (a)  $2^{5/2}$   
 (b)  $2^{7/2}$   
 (c) 33  
 (d) None
49. During a certain period the cost of living Index number goes up from 110 to 200 and the salary of the worker is also raised from Rs. 325 to Rs. 500. Does the worker :  
 (a) gain  
 (b) loses  
 (c) fully compensated  
 (d) gain lay 10%
50. Regression coefficient are \_\_\_\_\_  
 (a) dependent of change of origin and of scale  
 (b) independent of both change of origin and of scale  
 (c) dependent of change of origin but not of scale  
 (d) independent of change of origin but not of scale
51. If 2 percent of electric bulbs manufactured by a company are known to be defectives, what is the probability that a sample of 150 electric bulbs taken from the production process of the company would contain more than two defective bulbs?  
 (a) 0.46  
 (b) 0.43  
 (c) 0.77  
 (d) 0.58



## Mittal Commerce Classes

52. The difference between the roots of the equation  $x^2 - 7x - 9 = 0$  is:
- 7
  - $\sqrt{85}$
  - 9
  - $2\sqrt{85}$
53. A, B, C, X, Y, Z are seated in a straight line facing North. C is third to the right of Z and B sits second to the right of C. X sits to the immediate right of A. How many persons are seated between A and C ?
- One
  - Two
  - Three
  - Four
54. If 'HONEY' is coded as JQPGA. Which word is code as VCTIGVU?
- CARPETS
  - TRAPETS
  - TARGETS
  - UMBRELU
55. Identify the single letter, which when removed from the following words form new words.  
 MINK, WARM, LAMP, TEAM
- A
  - R
  - M
  - L
56. Find the odd one out.
- C72X
  - E110V
  - G140T
  - J180P
57. A man starts from a point, walk 8 km towards North, turns right and walks 12 km, turns left and walks 7 km turns and walks 20 towards South, turns right and walks 12 km. In which direction is he from the starting point ?
- North
  - South
  - West
  - East

**Directions (Q. 58-59):** Following questions are based on the information provided below:

- 'P x Q' means 'P is brother of Q.'
- 'P ÷ Q' means 'P is sister of Q.'
- 'P + Q' means 'P is mother of Q.'
- 'P - Q' means 'P is father of Q.'

58. Which of the following means 'M is nephew of R' ?  
 (a)  $M \times T + J \div R$   
 (b)  $R \times K - M \times T$   
 (c)  $R \times K - M$   
 (d)  $R - K \div M$
59. Which of the following means 'D is maternal uncle of T' ?  
 (a)  $D \times J + T$   
 (b)  $D \times J - T$   
 (c)  $D \div J + T$   
 (d)  $D \div J - T$
60. Six members of a family namely A, B, C, D, E and F are travelling together. 'B' is the son of C but C is not the mother of B. A and C are married couple. E is the brother of C, D is the daughter of A. F is the brother of B. How many male members are there in the family ?  
 (a) 3  
 (b) 2  
 (c) 4  
 (d) 1
61. What will be the next term of the following series?  
 1, 10, 37, 118, \_\_\_\_\_  
 (a) 354  
 (b) 361  
 (c) 363  
 (d) 586
62. If HEALTH is written as IFBMUI, then how will NORTH be written in that code ?  
 (a) OPSUI  
 (b) GSQNM  
 (c) FRPML  
 (d) IUSPO
63. A man is facing west. He turns 45 degrees in the clockwise direction and then another 180 degrees in the same direction and then 270 degrees in the anticlockwise direction. Which direction is he facing now?  
 (a) South - West  
 (b) North - West  
 (c) West  
 (d) South
64. If you are facing north - east and move 10 m forward, turn left and move 7.5 m. then you are  
 (a) North of your initial position  
 (b) South of your initial position  
 (c) East of your initial position  
 (d) None of the option

## Mittal Commerce Classes

65. A and B start moving towards each other from two places 200 m apart. After walking 60 m, B turns left and goes 20 m, then he turns right and goes 40 m. He then turns right again and comes back to the road on which he had started walking. If A and B walk with the same speed, what is the distance between them now?
- 80 m
  - 70 m
  - 40 m
  - 60 m
66. There are four towns P,Q,R and T. Q is to the south-west of P, R is to the east of Q and southeast of P, and T is to the north of R in line with QP. In which direction of P is T located?
- North
  - North-East
  - East
  - South-East
67. Five friends A,B,C,D and E are staying in the same locality. B's house is to the east of A's house and to the north of C's house. C's house is to the west of D's house. D's house is in which direction with respect to A's house?
- North-East
  - South-East
  - North-West
  - South-West
68. Pointing to a lady Ravi said, "She is the only daughter of the father of my sister's brother". How is she related to Ravi?
- Aunty
  - Mother
  - Sister
  - None
- Directions: Find odd One out of the following (69 - 71):**
69. 4, 5, 7, 10, 14, 18, 25, 32
- 7
  - 14
  - 18
  - 33
70. 8, 14, 26, 48, 98, 194, 386
- 14
  - 48
  - 98
  - 194
71. In a college party, 5 girls are sitting in a row. P is to the left of M and to the right of O. R is sitting to the right of N but to the left of O. Who is sitting in the middle?
- O
  - R
  - P
  - M

72. The sides of a triangle are in the ratio  $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ . If the perimeter of the triangle is 52 cm, the length of the smallest side is :-  
(a) 9 cm  
(b) 18 cm  
(c) 24 cm  
(d) 12 cm
73. If CLOCK is coded 34235 and TIME is 8679, what will be code of MOTEL?  
(a) 72894  
(b) 77684  
(c) 72964  
(d) 27894
74. If  ${}^n P_r = 2880$  and  ${}^n C_r = 120$  then the value of r is :-  
(a) -24  
(b) 6  
(c) 4  
(d) 3
75. The number of arrangement of 15 different this taken 6 at a time in which are particular thing never occur is :-  
(a)  ${}^{15}C_6$   
(b)  ${}^{15}P_6$   
(c)  ${}^{14}C_6$   
(d)  ${}^{14}P_6$
76. The Standard Deviation of first n natural numbers is 2 find the value of n.  
(a) 12  
(b) 7  
(c) 9  
(d) 5
77. An examination paper consists of 12 questions divided into two parts A and B. Part A contains 7 questions and part B contains 5 questions. A candidate is required to attempt 8 questions selecting at least 3 from each part. In how many maximum ways can the candidate select the questions?  
(a) 350  
(b) 210  
(c) 520  
(d) None
78. If covariance between two variables is 25  
Variance (x) = 36  
Variance (y) = 25 Find r.  
(a) 0.409  
(b) 0.419  
(c) 0.833  
(d) 0.027

## Mittal Commerce Classes

79. If mode is 18 and A.M is 24 find median  
 (a) 18  
 (b) 24  
 (c) 22  
 (d) 21
80. If average of 50 person is 2850 Rs. but later on it was discovered one person salary is wrongly taken as 8000 instead of 7800 find correct mean.  
 (a) Rs. 5,854  
 (b) Rs. 5,846  
 (c) Rs. 5,650  
 (d) Rs. 2,846
81. Intersecting point of less than ogive and more than ogive curve -  
 (a) Mean  
 (b) Mode  
 (c) Median  
 (d) 10<sup>th</sup> Percentile
82. The Sum of difference between ranks for spearmen rank correlation coefficient is-  
 (a) 0  
 (b) 1  
 (c) -1  
 (d) +2
83. The value of N in  $\frac{1}{7!} + \frac{1}{8!} = \frac{N}{9!}$  is :  
 (a) 81  
 (b) 78  
 (c) 89  
 (d) 64
84. Random Variable can be  
 (a) Positive  
 (b) Negative  
 (c) Zero  
 (d) All of these
85. Skewness of normal distribution is  
 (a) Positive  
 (b) Negative  
 (c) Zero  
 (d) None of these
86.  $f(x) = \frac{1}{\sqrt{2\pi}} \times e^{-\frac{z^2}{2}}$   $-\infty < z < \infty$  Z refers to  
 (a) Poison Variate  
 (b) Normal Variate  
 (c) Standard Normal Variate  
 (d) Biometric Table

## Mittal Commerce Classes

87. A, B, C, D are four quantities of the same kind such that  $A:B=4:5$ ,  $B:C=7:8$ ,  $C:D=12:13$ , then  $A:B:C$  is :-  
 (a) 4:35:104  
 (b) 4:35:84  
 (c) 28:35:40  
 (d) 30:40:45
88. Insert 4 GM's between 9 and 288 :-  
 (a) 27, 54, 108, 144  
 (b) 18, 36, 72, 144  
 (c) 36, 72, 144, 208  
 (d) 18, 27, 54, 108
89. The derivative of  $x^2 \log x$  is :-  
 (a)  $1 + 2 \log x$   
 (b)  $2 \log x$   
 (c)  $x(1+2 \log x)$   
 (d) None
90. Five competitors in a contest are ranked by two judges in the order 1, 2, 3, 4, 5 and 5,4,3,2,1 respectively. Calculate the Spearman's rank correlation coefficient.  
 (a) -0.5  
 (b) -1  
 (c) 0.5  
 (d) 1
91. Given the prices of 2 commodities are increased by 10% and 20% respectively and the price of another commodity is decreased by 30%. The relative importance of 3 commodities are in the ratio 3:3:1. Find weighted price index number.  
 (a) 80  
 (b) 109  
 (c) 108.5  
 (d) 110
92. Chronological classification is :  
 (a) classification of units on the basis of time  
 (b) classification of units on the basis of geographical area  
 (c) classification of units according to the characteristic of attributes  
 (d) classification of units according to the characteristic of variables
93. If  $u = 2x+5$ ,  $v=-3y +1$ , and the regression coefficient of  $y$  on  $x$  is  $-1.2$ , the regression coefficient of  $v$  on  $u$  is :  
 (a) 1.8  
 (b) -1.8  
 (c) 3.26  
 (d) 0.8
94. The mean of set of observation is  $\bar{x}$ . If each observation is divided by  $\alpha$ ,  $\alpha \neq 0$  and then is increased by 10, then the mean of the new set is  
 (a)  $\bar{x} / \alpha$   
 (b)  $(\bar{x} + 10) / \alpha$

(c)  $\frac{-x}{\alpha} + 10$

(d)  $\frac{-}{\alpha x} + 10$

95. The value of  $\left( \frac{x/y - 1}{x^2/y^2 - 1} \right)$  is

(a)  $\frac{y}{x + y}$

(b)  $\frac{x}{x + y}$

(c)  $\frac{xy}{x + y}$

(d)  $\frac{x}{x - y}$

96. If  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{5}$  and  $\frac{1}{x}$  are in proportion, then the value of 'x' will be:-

(a)  $\frac{2}{15}$

(b)  $\frac{15}{2}$

(c)  $\frac{10}{3}$

(d)  $\frac{5}{6}$

97. Sum of deviation from mean for any set of observation is -

- (a) Negative
- (b) Positive
- (c) Zero
- (d) None of these

98. If  $b_{yx} = 1.24$ ,  $b_{xy} = 0.36$ ,  $\bar{x} = 5.5$ ,  $\bar{y} = 8.8$ , then regression equation of  $y$  on  $x$  is given by
- (a)  $y = 1.24x + 1.98$
  - (b)  $y = -1.24x + 1.98$
  - (c)  $x = 0.3y + 2.86$
  - (d) None of these
99. A person purchases 5 rupees worth of eggs from 10 different markets. You are to find the average no. of eggs per rupee for all the markets taken together. What is the suitable form of average in this case \_\_\_\_\_
- (a) AM
  - (b) GM
  - (c) HM
  - (d) None
100.  $X$  is a random variable taking the values 5, 6 and 7 with probabilities  $1/3$ ,  $1/4$  and  $5/12$ , then Find  $E(X)$ .
- (a) 5.14
  - (b) 6.08
  - (c) 7.12
  - (d) 3.29

— \*\* —