

QUANTITATIVE APTITUDE FULL SYLLABUS TEST-1

MCQ's

1. If one type of rice of cost Rs 13.84 is mixed with another type of rice of cost Rs 15.54, the mixture is sold at Rs 17.60 with a profit of 14.6% on selling price then in which proportion the two types of rice mixed.
a) 3:7 b) 5:7 c) 7:9 d) 9:1
2. The mean proportional between 24 and 54 is:
a) 33 (b) 34 (C) 35 (d) 36
3. Income of R and S are in the ratio 7:9 and their expenditure are in the ratio 4:5. Their total expenditure is equal to income of R. What is the ratio of their savings?
a) 23:36 b) 28:41 c) 31:43 d) 35:46
4. In a department, the number of males and females are in the ratio 3:2. If two males and 5 females join department, then the ratio become 1:1, initially the number of female in the department is
a) 9 (b) 6 (C) 3 (d) 8
5. If $2^x \times 3^y \times 5^z = 360$. Then what is the value of x,y,z?
a) 3,2,1 b) 1,2,3 c) 2,3,1 (d) 1,3,2
6. $\frac{2^{n+2n-1}}{2^{n+1} + 2^n}$
a) 1/2
b) 3/2
c) 2/3
d) 1/3
7. Find the value of 'a' from the following
 $(\sqrt{9})^{-5} \times (\sqrt{3})^{-7} = (\sqrt{3})^{-a}$
(a) 13
(b) 11
(c) 15
(d) 17
8. Find the value of Z from $(\sqrt{9})^{-8} \times (\sqrt{3})^{-5} = 3^z$
a) 2/21
b) -21/2
c) 21/2
d) -2/21

9. If $\log_2 x + \log_4 x = 6$, then the value of x is

- a) 16
- b) 32
- c) 64
- d) 128

10. If $\log x = m + n$; $\log y = m - n$ then $\log \left(\frac{10x}{y^2}\right) =$

- a) $1 + m + 3n$
- b) $M - 1 + 3n$
- c) $M + 3n + 1$
- d) None

11. If $\log_a (\sqrt{3}) = 1/6$ find the value of 'a'

- a) 81
- b) 9
- c) 27
- d) 3

12. Find the value of $\log(x^6)$ If $\log(x) + 2 \log(x^2) + 3 \log(x^3) = 14$.

- a) 3
- b) 4
- c) 5
- d) 6

13. If the equations $kx + 2y = 5$, $3x + y = 1$ has no solution then the value of k is

- a) 5
- b) $2/3$
- c) 6
- d) $3/2$

14. Particular company produces some articles on a day. The cost of production per article is Rs 2 more than thrice the number of articles and the total cost of production is Rs 800 on a day then the number of articles is:

- a) 16
- b) 14
- c) 18
- d) 15

15. If the sides of an equilateral triangle are shortened by 3 unit, 4 units and 5 units respectively and a right triangle is formed then the sides of an equilateral triangle is

- a) 6 units
- b) 7 units
- c) 8 units
- d) 10 units

16. A group of 400 soldiers posted at border area had provisions for 31 days. After 28 days 280 soldiers from this group were called back. Find the number of days for which the remaining ration will be sufficient?

- a) 3
- b) 6
- c) 8
- d) 10

17. If roots of equation $x^2 + x + r = 0$ are ' α ' and ' β ' and $\alpha^3 + \beta^3 = -6$

- a) $-5/3$
- b) $7/3$
- c) $-4/3$
- d) 1

18. If arithmetic mean between roots of a quadratic equation is 8 and the geometric mean between them is 5, the equation is-

- a) $x^2 - 16x - 25 = 0$
- b) $x^2 - 16x + 25 = 0$
- c) $x^2 - 16x + 5 = 0$
- d) None of these

19. Find the value of K so that $x = 2$ is a root of the equation $3x^2 = 2kx + 5 = 0$

- a) $17/4$
- b) $4/17$
- c) $-17/4$
- d) $-4/17$

20. What will be the value of k, if the roots of the equation $(k-4)x^2 - 2kx + (k+5) = 0$ are equal?

- a) 18
- b) 20
- c) 19
- d) 21

21. The linear relationship between two variables in an inequality

- a) $ax + by \leq c$
- b) $ax \cdot by \leq c$
- c) $axy + by \leq c$
- d) $ax + bxy \leq c$

22. The common region in the graph of the inequalities $x + y \leq 4$, $x - y \leq 4$, $x \geq 2$ is

- a) Equilateral triangle
- b) Isosceles triangle
- c) Quadrilateral
- d) Square

23. XYZ Company has a policy for its recruitment as: it should not recruit more than eight men (x) to three women (y). How can this fact be expressed in inequality?

- a) $3y \geq 8x$
- b) $3y \leq x/8$
- c) $8y \geq 3x$
- d) $8y \leq 3x$

24. The rate of simple: interest on a sum of money is 6% p.a. for first 3 years, 8% p.a. for the next five years and 10% p.a. for the period beyond 8 years. if the simple interest accrued by the sum for a period for 10 years is Rs 1,560. The sum is:

- a) Rs 1,500
- b) Rs 2,000
- c) Rs 3,000
- d) Rs 5,000

25. In simple interest if the principal is Rs 2,000 and the rate and time are the roots of the equation $x^2 - 11x - 30 = 0$ then simple interest is

- a) Rs 500
- b) Rs 600
- c) Rs 700
- d) Rs 800

26. An investor is saving to pay off an obligation of Rs 15,250 which will be due in seven years, if the investor is earning 7.5% simple interest rate per annum, he must deposit Rs _____ to meet the obligation.

- a) 8,000
- b) 9,000
- c) 10,000
- d) 11,000

27. A person deposited Rs 5,000 in a bank. The deposit was left to accumulate at 6% compounded quarterly for the first year and at 8% compounded semiannually for the next eight years. The compound amount at the end of 13 years is:

- a) Rs 12621.50 b) Rs 12613.10
- c) Rs 13613.10
- d) None

28. If Rs 1,000 be invested at interest at interest rate of 5% and the interest be added to the principal every 10 years, than the number of years in which it will amount to Rs 2,000 is:

- a) $16 \frac{2}{3}$ years
- b) $6 \frac{1}{4}$
- c) 16 years
- d) $6 \frac{2}{3}$

29. Find the effective rate of interest if an amount of Rs 30,000 deposited in a bank. For 1 year at the rate of 10% p.a. compounded semi annually.

- a) 10.05%
- b) 10.10%
- c) 10.20%
- d) 10.25%

30. A sum of money is lent at C.I. rate 20% p.a. 2 years. It would fetch Rs 482 more if the interest is compounded half yearly. The sum is:

- a) Rs 19,800
- b) Rs 19,900
- c) Rs 20,000
- d) Rs 20,100

31. The difference between compounded interest and simple interest on an amount of Rs 15,000 for 2 years is Rs 96. What is the rate of interest per annum?

- a) 9%
- b) 8%
- c) 11%
- d) 10%

32. A machine depreciates at 10% of its value at the beginning of a year. The cost and scrap value realized at the time of sale being Rs 23,240 and Rs 9,000 respectively. Approximately, for how many years the machine is put to use?

- a) 7
- b) 8
- c) 9
- d) 10

33. Vipul purchases a car for Rs 5,50,000. He gets a loan of Rs 5,00,000 at 15% p.a. from a bank and balance Rs 50,000 he pays at the time of purchase. He has to pay the whole amount of loan in 12 equal monthly instalments with interest starting from the end of the first month.

The money he has to pay at the end of every month is:

- a) Rs 45,130.43
- b) Rs 45,230.43
- c) Rs 45,330.43
- d) None of the these

34. Paul borrows Rs 20,000 on condition to repay it with compound interest at 5% p.a. in annual installment of Rs 2,000 each. Find the number of years in which the debt would be paid off.

- a) 10 years
- b) 12 years
- c) 14 years
- d) 15 years

35. Rs 800 is invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of this annuity after 10th payment? Given that $1.005^{10} = 1.0511$

- a) Rs 4,444
- b) Rs 8,766
- c) Rs 3,491
- d) Rs 8,176

36. Raj made an investment of Rs 15,000 in a scheme and at the time of maturity the amount was Rs 25,000. If compounded annual growth rate (CAGR) for this investment is 8.88%. Calculate the approximate number of years for which he has invested the amount.

- a) 6
- b) 7.7
- c) 5.5
- d) 7

37. A car is available for Rs 4,98,200 cash payment or Rs 60,000 cash down payment followed by three equal annual instalments. If the rate of interest charged is 14% per annum compounded yearly, then total interest charged in the instalment plan is (given $P(3,0.14) = 2.32163$):

- a) Rs 1,46,314
- b) Rs 1,46,137
- c) Rs 1,28,040
- d) Rs 1,58,040

38. Find the number of arrangements of 5 things taken out of 12 things, in which one particular thing must always be included.

- a) 39,000
- b) 37,600
- c) 39,600
- d) 36,000

39. If 5 books of English 4 books of Tamil and 3 books of Hindu are to be arranged in a single row so that books of same language come together

- a) 1,80,630
- b) 1,60,830
- c) 1,03,680
- d) 1,30,680

40. The number of parallelograms that can be formed by a set of 6 parallel lines intersected by the another set of 4 parallel lines is _____

- a) 360
- b) 90
- c) 180
- d) 45

41. The number of words from the letters of the word BHARAT, in which B and H will never come together, is

- a) 120
- b) 360
- c) 240
- d) None

42. A fruit basket contains 7 apples, 6 bananas and 4 mangoes. How many selections of 3 fruits can be made so that all 3 are apples?

- a) 120 ways
- b) 35 ways
- c) 168 ways
- d) 70 ways

43. How many 4 letter words with or without meaning, can be formed out of the letter of the word, 'LOGARITHMS', if repetition of letters is not allowed?

- a) 7,020
- b) 5,040
- c) 1,480
- d) 2,520

44. If the sum of n terms of an A.P be $2n^2 + 5n$, then its ' n^{th} ' term is

- a) $4n-2$
- b) $3n-4$
- c) $4n+3$
- d) $3n+4$

45. If x, y, z , are the terms in G.P then the terms $x^2 + y^2$, $xy + yz$, $y^2 + z^2$ are in:

- a) A.P
- b) G.P
- c) H.P
- d) None of the these

46. A person pays Rs 975 in monthly instalments, each instalment is less than former by Rs 5. The amount of 1st instalment is Rs 100. In what time will be entire amount be paid?

- a) 26 months
- b) 15 months
- c) Both (a) & (b)
- d) 18 months

47. The sum of first eight terms of geometric progression is five times the sum of the first four terms. The common ratio is

- a) $\sqrt{2}$
- b) $\sqrt{3}$
- c) 4
- d) 2

48. if $(x-1) = x^2 - 4x + 8$, then $f(x+1) =$

- a) $x^2 + 8$
- b) $x^2 + 7$
- c) $x^2 + 4$
- d) $x^2 - 4x$

49. Of the 200 candidates who were interviewed for a position at call center, 100 had a two wheeler, 70 had a credit card and 140 had a mobile phone 40 of them had both a two wheeler and a credit card, 30 had both a credit card and mobile phone, 60 had both a two wheeler and a mobile phone and 10 had all the three. How many candidates had none of them?

- a) 0
 b) 20
 c) 10
 d) 18
50. In a class, 80 students speak Hindi, 60 students speak English and 40 students speak both Hindi and English then the number of students in the class is _____.
- a) 100
 b) 120
 c) 140
 d) 180

51. If $f(x) = x^2 - 1$ and $g(x) = [2x + 3]$, then $f \circ g(3) - g \circ f(-3) =$

- a) 71
 b) 61
 c) 41
 d) 51

52. $\lim_{x \rightarrow t} \frac{x^3 - 5x^2 + 2x + 2}{x^2 + 2x^2 - 6x + 3}$ is equal to

- a) 5
 b) -5
 c) 1/5
 d) None of these

53. If $\lim_{n \rightarrow \infty} \frac{en - 2n}{x - 2} = 80$ and $n \in \mathbb{N}$ then

- a) $n = 5$
 b) $n = 4$
 c) $n = 0$
 d) None of these

54. $\lim_{x \rightarrow \infty} (e^{2x} - 1) / x$ is equal to

- a) 1/2
 b) 2
 c) 0
 d) None of these

55. $\lim_{x \rightarrow 1} (2x^2 + 7x + 5 / x^{00} 4x^2 + 3x + 1)$ is equal to 1 where 1 is

- a) -1/3
 b) 1/2
 c) 2
 d) None of these

56. If $y = \log [5 - 4x^2 / 3 + 5x^2]$,

Then $dy/dx =$ _____

- a) $8/4x - 5 - 10/3 + 5x$
 b) $(4x^2 - 5) - (3 + 5x^2)$
 c) $8x / 4x^2 - 5 - 10x / 3 + 5x^2$
 d) $8x - 10$

57. If $e^{xy} - 4xy = 4$ then $dy/dx =$

- a) y/x
- b) $-y/x$
- c) x/y
- d) $-x/y$

58. If $x^y = e^{x-y}$ then

- $dy/dx =$ _____.
- a) $2\log x / (1+\log x)^2$
 - b) $\log x / 1+\log x$
 - c) $\log x / (1+\log x)^2$
 - d) None of these

59. If the given cost function of commodity is given by $C = 150x - 5x^2 + x^3/6$,

Where C stands for cost and x stands for output, if the average cost is equal to the marginal cost then the output $x =$ _____.

- a) 5
- b) 10
- c) 15
- d) 20

60. The speed of a train at a distance x (from the starting point) is given by $3x^2 - 5x + 4$. What is the rate of change (of distance) at $x = 1$?

- a) -1
- b) 0
- c) 1
- d) 2

61. $\int \frac{6x+4}{(x-2)(x-3)} dx$ is equal to

- a) $22 \log(x-3) - 16(x-2)$
- b) $11\log(x-3) - 8(x-2)$
- c) $22\log(x-3) - 16\log(x-2)$
- d) $22\log(x-3) + 16\log(x-2)$

62. $\int 2^{3x} \cdot 3^{2x} \cdot 5^x \cdot dx =$ _____.

- a) $2^{3x} \cdot 3^{2x} \cdot 5^x / \log(720) + c$
- b) $2^{3x} \cdot 3^{2x} \cdot 5^x / \log(360) + c$
- c) $2^{3x} \cdot 3^{2x} \cdot 5^x / \log(180) + c$
- d) $2^{3x} \cdot 3^{2x} \cdot 5^x / \log(90) + c$

63. The value of $\int_2^3 \frac{1-x}{1+x} dx$ is equal to:

- a) $\log 3/2 - 1$
- b) $2\log 3/2 - 1$
- c) $1/2 \log 3/2 - x$
- d) $1/2 \log 2/3 - 1$

64. Find the value of $\int x e^x dx$

- a) $e^x(x-1) + c$
- b) $e^x(2x-1) + c$
- c) $e^x(x-1)$
- d) None of these

65. Find the area under the curve $f(x) = x^2 + 5x + 2$ with the limits 0 to 1.

- a) 3.833
- b) 4.388
- c) 4.833
- d) 3.338

66. If LOSE is coded as 1357 and GAIN is coded as 2468, what do figure 82146 for?

- a) NGLAI
- b) NGLIA
- c) GNLIA
- d) GNLA

67. If in a certain code "Thanks" is written as "SKNTHA", then how is "STUPID" written?

- a) DIPUTS
- b) DISPUT
- c) $e^x(x-1)$
- d) None of these

68. Six flats on a floor in two rows facing North and South are allotted to P, Q, R, S, T, and U. If Q gets a North facing flat and is not next to S. S and U get diagonally opposite flat. R next to U gets a South facing flat and T gets a North facing flat. Whose flat is between Q and S?

- a) T
- b) U
- c) R
- d) P

69. A starts from a point and walk 2 km north, then turns left and walk 1 km, then again turns left and walks 2 km. Point out the direction in which he is going now?

- a) East
- b) West
- c) North
- d) South

70. Ms. N walks 10 km towards North from there she walks 6 km towards south. Then she walks 3 km towards East. How far and in which direction is she with reference to her starting point?

- a) 4 km west
- b) 6 km west
- c) 3 km east
- d) 5 km north-east

71. Deepika starts walking straight towards east. After walking 65m, she turns to the left and walks 25m straight. Again she turns to the left and walks a distance of 40m. At what distance and in which direction currently she is from the initial point?
- a) 35.35m in North east
 - b) 35.35m in south west
 - c) 25m in north
 - d) 25m in west
72. Five senior citizens are living in a multi-storeyed building. Mr. Manu lives in a flat above Mr. Ashokan. Mr. Lokesh in a flat below Mr. Gaurav, Mr. Ashokan lives in a flat below Mr. Gaurav and Mr. Rakesh lives in a flat below Mr. Lokesh. Who lives in the top most flat?
- a) Mr. Lokesh
 - b) Mr. Gaurav
 - c) Mr. Manu
 - d) Mr. Rakesh
73. A,B,C,D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting between?
- a) C and D
 - b) D and E
 - c) B and C
 - d) B and D
74. Seven friends A,B,C,D,E,F, & G are watching movie sitting in a row. E is sitting at one extreme end. C is sitting second to E. B is sitting between A & C. G is not sitting at any extreme end. A is not at any extreme end. D is sitting immediate on F, who is sitting in the middle?
- a) G
 - b) D
 - c) C
 - d) B

75. Pointing towards "A", "B", said: "Your mother is they younger sister of my mother". "A" is related to "B" as

- a) Uncle
- b) Cousin
- c) Nephew
- d) Father

77. Cost of sugar in a month under the heads raw materials, labour, direct production and other were 12,20,35 & 23 units respectively. The difference between their central angles for the largest & smallest components of the cost of Sugar is

- a) 92°
- b) 72°
- c) 48°
- d) 56°

79. The following frequency distribution

X:	12	17	24	36	45
Y:	2	5	3	8	9

Is classified as:

- a) Discrete distribution
- b) Continuous distribution
- c) Cumulative frequency distribution
- d) None of the above

80. In a graphical representation of data, the largest numerical value is 4 the smallest numerical value is 25. If classes desired are 4 then which class interval is

- a) 45
- b) 5
- c) 20
- d) 7.5

76. The most appropriate diagram to represent the data relating to the monthly expenditure on different items by a family is

- a) Histogram
- b) Pie-diagram
- c) Frequency polygon
- d) Line graph

78. There were 200 employees in an office in which 150 were married. Total male employees were 160 out of which 120 were married. What was the number of female unmarried employees?

- a) 30
- b) 10
- c) 40
- d) 50

81. The following data relate to the marks of 48 students in statistics:

56	10	54	38	21	43	12	22
48	51	39	26	12	17	36	19
48	36	15	33	30	62	57	17
5	17	45	46	43	55	57	38
43	28	32	35	54	27	17	16
11	43	45	2	16	46	28	45

What are the frequency densities for the class intervals 30-39,40-49,50-59?

- a) 0.20, 0.50, 0.90
- b) 0.70, 0.90, 1.10
- c) 0.1875, 0.1667, 0.2083
- d) 0.90, 1.00, 0.80

82. The mean salary of a group of 50 persons is Rs 5,850. later on it is discovered that the salary of one employee has been wrongly taken as Rs 8,000 instead of Rs 7,800. The corrected mean salary is

- a) Rs 5,854
- b) Rs 5,846
- c) Rs 5,650
- d) None of the above

83. There were 50 students in a class. 10 failed whose average marks were 2.5. The total marks of class were 281. Find the average marks of students who passed?

- a) 6.4
- b) 25
- c) 256
- d) 86

84. Expenditures of a company (in million rupees) per item in various years

Years	Items of expenditures
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	Salary	Fuel and transport	Bonus	Interest on loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

What is the average amount of interest per year which the company had to pay during this period?

- a) 33.66
- b) 36.66
- c) 31.66
- d) 39.66

85. The average age of 15 students in a class is 9 years. Out of them, the average age of 5 students is 13 years and that of 8 students is 5 years. What is the average of remaining 2 students?

- a) 5 years
- b) 9 years
- c) 10 years
- d) 15 years

86. If standard deviation of X is σ , then standard deviation of $ax+b/c$, where a , b and c are arbitrary constants, will be

- a) σ
- b) $a\sigma + b/c$
- c) $a/c \cdot \sigma$
- d) σ

87. If same amount is added to or subtracted from all the values of the individual series then the standard deviation and variance both shall be

- a) Changed
- b) Unchanged
- c) Same
- d) None of these

89. Following are the ages of 8 employees of a small old age home expressed in 96,50,67,75,71,69,64,66. Find the range and its coefficient.

- a) 46,31.51 respectively
- b) 51,37.67 respectively
- c) 43,29.49 respectively
- d) 49,36.42 respectively

91. A bag contains 5 red balls, 4 Blue Balls and 'm' Green balls. If the random probability of picking two green balls is $\frac{1}{7}$. What is the No. of green balls (m)

- a) 5
- b) 7
- c) 6
- d) None of above

88. The Q.D of 6 members 15,8,36,40,38,41 is equal to

- a) 12.5
- b) 25
- c) 13.5
- d) 37

90. If the variance of a random variable 'x' is 17 then what is variance of $y = 2x + 5$?

- a) 34
- b) 39
- c) 68
- d) 78

92. The sum of two numbers obtained in a single throw of two dice is 'S'. Then the probability of 's' will be maximum when 'S' =

- a) 5
- b) 7
- c) 6
- d) 8

93. If 4 letters are put randomly among the 4 envelopes then the probability that all are not put in correct envelopes:

- a) $\frac{1}{24}$
- b) 1
- c) $\frac{23}{24}$
- d) $\frac{9}{24}$

94. In a group of 20 males and 15 females 12 males and 8 females are service holders. What is the probability that a person selected at random from that group is a service holder given that the selected person is male?
- a) 0.40
b) 0.60
c) 0.45
d) 0.55
96. A renowned hospital usually admits 200 patients every day. One percent patients, on an average, require special room facilities. On one particular morning, it was found that only one special room is available. What is the probability that more than 3 patients would require special room facilities?
- a) 0.1428
b) 0.1732
c) 0.2235
d) 0.3450
97. A researcher wishes to estimate the mean of a population by using sufficiently large sample. The probability is 0.95 that the sample mean will not differ from the true mean by more than 25% of the standard deviation. How large sample should be taken?
- a) 72
b) 62
c) 42
d) 32
98. In Binomial distribution, $\mu = 4$ and $\sigma^2 = 3$ then mode =
- a) 4
b) 4.25
c) 4.5
d) 4.1
98. If every 9th unit is selected from universal set then this type of sampling is known as:
- a) Quota sampling
b) Systematic sampling
c) Stratified sampling
d) None of these
99. The covariance between two variables X and Y is 8.4 and their variances are 25 and 36 respectively. Calculate Karl Pearson's coefficient of correlation between them.
- a) 0.82
b) 0.28
c) 0.01
d) 0.09
100. If the sum of squares of deviations of ranks of 8 students is 50 then the rank correlation coefficient is_____.
- a) 0.40 b) 0.45 c) 0.5 d) 0.8

(100 x 1 = 100 marks)