Mock Test Paper - Series I: April 2025

Date of Paper: 24th April 2025

Time of Paper: 2.00 P.M. to 4.00 P.M.

FOUNDATION COURSE

PAPER – 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. The mean proportional to 8 and 32 is -
   (a) 4
   (b) 24
   (c) 16
   (d) 40
2. If x: y =7:8, then for 6x+5y:4x+3y =
   (a) 11:7
   (b) 30.12
   (c) 35:24
   (d) 41:26
3. If x^3-1= 1330 and y^3-1= 1727, then the value of x^2-y^2= 1330 is
   (a) 265
   (b) -265
   (c) -23
   (d) 23
4. The value of 7 log (16/15) + 5 log (25/24) + 3 log (81/80) =
   (a) 1
   (b) log5
   (c) log 2
   (d) log 3

5. Simplification of $\frac{x^{m+3n}.x^{4m-9n}}{x^{6m-6n}}$ is:

   (a) x^m

   (b) x^{-m}

   (c) x^n

   (d) x^{-n}

6. Find the value of $\left[\log_{10}\sqrt{25} - \log_{10}(2^3) + \log_{10}(4)^2\right]$

   (a) x

   (b) 10

   (c) 1

   (d) None

7. $\log4\ (x^2 + x) - \log4\ (x+1) = 2$. Find x

   (a) 16

   (b) 0

   (c) -1

   (d) None of these

8. A manufacturer produces two products A and B. The profit on product A is ₹ 10 on each unit and profit on product B is ₹ 13 on each unit. Then the objective function is

   (a) Minimize $Z = 10x_1 + 13x_2$

   (b) Maximize $Z = 10x_1 + 13x_2$

   (c) Minimize $Z = 13x_1 + 10x_2$

   (d) Maximize $Z = 13x_1 + 10x_2$

9. If $(2 + \sqrt{3})$is a root of a quadratic equation $x^2 + px + q = 0$ then find the value of p and q.

   (a) (4, -1)

   (b) (4,1)

   (c) (-4, 1)

   (d) (2,3)

10. A company produce two type of product A & B which require processing in two machines. First machine can be used up to 15 hours and second can be used at most 12 hrs. in a day. The product A requires 2 hours. on machine 1 & 3 hours. on machine 2. The product B requires 3 hours. on machine 1 & 1 hour on machine 2. This can be expressed as:

(a) $2x_1 + 3x_2 \leq 15, 3x_1 + x_2 \leq 12$

(b) $2x_1 + 3x_2 \leq 15, 3x_1 + x_2 \leq 15$

(c) $3x_1 + 2x_2 \leq 15, 2x_1 + x_2 \leq 12$

(d) $2x_1 + 3x_2 \leq 12, 3x_1 + x_2 \leq 15$

11. A certain amount at a rate of simple interest x, doubles in 5 years. At another rate of simple interest y, it becomes three time 'in 8 years. Then the difference between these two interest rates is

(a) 5%

(b) 8%

(c) 3%

(d) 4%

12. Anil deposited a certain amount in a bank at the rate of 10% per annum compounded semi-annually. At end of one year Anil received a sum of ₹ 13,230. Then the sum deposited in the bank is

(a) ₹ 13,000

(b) ₹ 1,200

(c) ₹ 12,000

(d) ₹ 5,000

13. The effective rate of interest corresponding to a nominal rate of 8% per annum payable quarterly is (Given that $(1.02)^4 = 1.08243216$)

(a) 6.24%

(b) 5.38%

(c) 8.24%

(d) 82.4%

14. If Sum triples in 15 years at Simple rate of interest, rate of interest per annum will be:

(a) 13.0%

(b) 13.3%

(c) 13.5%

(d) 18.0%

15. The future value of an annuity of ₹ 7,200 made annually for 5 years at the rate of 12% compounded annually is (Given that $(1.12)^5 = 1.76234$)

(a) ₹ 45,740.40

(b) ₹ 4,574.50

(c) ₹ 54,740.50

(d) ₹ 2,400.50

16. Rakesh borrows a loan of ₹ 10,000 from bank and he agreed to pay back in 24 equal instalments at the rate of 10% compound interest per annum. Then each installment amount is (Given that $(1.1)^{24} = 9.84973$)

(a) ₹ 1,200.35

(b) ₹ 1,112.99

(c) ₹ 1,211.99

(d) ₹ 1,321.56

17. What is the present value of ₹ 80,000 to be required after 10 years if the interest rate be 6% ? (Given that $(1.06)^{10} = 1.7908$)

(a) ₹ 6,4998.7

(b) ₹ 4,4672.8

(c) ₹ 5,8673.2

(d) ₹ 1,7908.6

18. Sam invested ₹ 12,000 for 10 years in financial company. At the end of 10^{th} year his investment value is ₹ 18,000. Then the Compound Annual Growth Rate (CAGR) is if $(x)^{1/n} = 1.0413$

(a) 41.04%

(b) 4.13%

(c) 11.56%

(d) 12.06%

19. Mr. A invested ₹ 20,000 in a bank at the rate of 4.5% p.a. He received ₹ 27,500 after end of term. Find out the period?

(a) 4.50 years

(b) 8.34 years

(c) 6.50 years

(d) 8.10 years

20. ₹ 1,500 is paid every years for 10 years to pay a loan. What is the loan amount, if rate of interest 5% p.a. ? If $(1.05)^{10} = 1.6288$

(a) ₹ 11,581.53

(b) ₹ 11,505.50

(c) ₹ 11,903.38

(d) ₹ 12,503.48

21. A certain amount is invested in a bank. What annual rate of interest compounded annually becomes 8 times of this investment in 5 years? (Given that $8^{1/5} = 1.515716$)

(a) 51.57%

(b) 5.15%

(c) 15.15%

(d) 1.51%

22. If the compound interest on a certain sum for 2 years at 5% per annum is ₹ 246, then the simple interest on the same sum for double the time and double the rate per annum is:

(a) ₹ 900

(b) ₹ 960

(c) ₹ 1,000

(d) ₹ 1,100

23. Madhu deposits ₹ 100 in a Bank at the beginning of every year for 20 years at 10% interest rate compounded annually, how much would she earn after 20 years? [Given that $(1.1)^{20} = 6.7275$]

(a) ₹ 6,300.25

(b) ₹ 6,500.45

(c) ₹ 5,600.25

(d) ₹ 6,25.35

24. How much amount is required to be invested every year so as to accumulate ₹ 15,00,000 at the end of 20 years if interest is compounded annually at 10% ? [Given A(n, i) = 57.274999]

(a) ₹ 26,189.44

(b) ₹ 29,190.35

(c) ₹ 24,155.35

(d) ₹ 30,698.44

25. Assuming that the discount rate is 12% per annum, how much would you pay to receive ₹ 100, growing at 8% annually forever ?

(a) ₹ 2,500

(b) ₹ 2,700

(c) ₹ 3,000

(d) ₹ 2,000

26. In how many ways can 5 Engineers, 4 Professors, and 6 Auditors be seated in a row so that all person of the same profession sit together?

(a) 3! x 5!

(b) 3! x 5! x 4!

(c) 3! x 5! x 4! x 6!

(d) 3! x 5! x 6!

27. n articles are arranged in such a way that 2 particular articles never come together. The number of such arrangements is

(a) (n-2) $\lfloor$n-1

(b) (n-1) $\lfloor$n-2

(c) $\lfloor$n

(d) none of these

28. The number of ways the letters of the word ‘TRIANGLE’ to be arranged so that the word ‘angle’ will be always present is

    (a) 20

    (b) 60

    (c) 24

    (d) 32

29. 3 ladies and 3 gents can be seated at a round table so that any two and only two of the ladiessit together. The number of ways is

    (a) 70

    (b) 27

    (c) 72

    (d) none of these

30. The number of ways in which the letters of the word `MOBILE’ be arranged so that consonantsalways occupy the odd places is

    (a) 36

    (b) 63

    (c) 30

    (d) none of these.

31. The 4 arithmetic means between –2 and 23 are

    (a) 3, 13, 8, 18

    (b) 18, 3, 8, 13

    (c) 3, 8, 13, 18

    (d) none of these

32. The first and the last terms of an AP series –8, –6, –4, …… is 52. The number of terms is

    (a) 101

    (b) 100

    (c) 99

    (d) none of these

33. The sum of 3 numbers of a G P is 39 and their product is 729. The numbers are -

(a) 3, 27, 9

(b) 9, 3, 27

(c) 3, 9, 27

(d) none of these

34. The function $f(x) = 2^x$ is

(a) one-one mapping

(b) one-many

(c) many-one

(d) none of these

35. A town has a total population of 50,000. Out of it 28,000 read the newspaper X and 23,000 read Y while 4,000 read both the papers. The number of persons not reading X and Y both is -

(a) 2,000

(b) 3,000

(c) 2,500

(d) none of these

36. If $f(x) = x+3$, $g(x) = x^2$, then fog (x)

(a) $x^2 + 3$

(b) $x^2 + x + 3$

(c) $(x+3)^2$

(d) none of these

37. $\lim_{n\to\infty} \left(\frac{1}{3}+\frac{1}{3^2}+\frac{1}{3^3}+.....\frac{1}{3^n}\right)$ is equal to :

(a) $\frac{1}{2}$

(b) $\frac{1}{3}$

(c) 2

(d) 1

38. Given x = 2t + 5; y = t^2-2, then $\frac{dy}{dx}$ is calculated as:

(a) t

(b) 1/t

(c) -1/t

(d) None

39. If f(x) = x^k and f ` (1) = 10 then the value of k is

(a) 10

(b) -10

(c) 1/10

(d) None

40. The marginal revenue function for a product MR = 5-4x + $3x^2$. Then the total revenue function is -

(a) $5x + 2x^2 + x^3$

(b) $5x - 2x^2 + x^3$

(c) $5x + 2x^2 + x^3 + 3$

(d) $5x - 2x^2 - x^3$

41. Find the missing term CEGI, XVTR, GIKM, _____.

(a) TRPN

(b) KMBD

(c) AMNL

(d) JLNR

42. In certain code language 'CLOCK' is coded as 75276 and 'EARTH' is coded as 83491, then 'COAT' is coded as

(a) 7329

(b) 7239

(c) 7932

(d) 7529

43. In a certain language ‘MENTION’ is written as ‘NFOUJPO’, the code of ‘MYSTIFY’ is:

(a) NZTUJGZ

(b) NFOFTJT

(c) LNEITNO

(d) OERESTIN

44. Find odd man out of the series 121, 143, 165, 186, 209

(a) 143

(b) 165

(c) 186

(d) 209

45. In a certain language, FLOWER is coded UOLDVI, then how is TERMINAL coded in that language?

(a) FLKPMROZ

(b) GVINRMZO

(c) RVNIGLKA

(d) MNIVGYEO

46. Anil started walking 5 kms towards north then he turned left and walked 3 kms. Again, he turned left and walked 5 kms. Then the total number of kms he walked is

(a) 13 kms

(b) 8 kms

(c) 3 kms

(d) 5 kms

47. Raju started walking 10 kms towards east from his home. He turned right and walked 5 kms to the south to reach his school. In which directions is his school from his home?

(a) South – East

(b) North – East

(c) South – West

(d) North – West

48. A started walking from his house & walk 4 km north side then turns right & walk 3 km. If he turns right again, what is the direction now?

(a) North

(b) West

(c) East

(d) South

49. A man starts walking 10 km to the North. He turns right and walks 5 km, then turns right again and walks 10 km. In which direction is man now from the starting point?

(a) East

(b) West

(c) North

(d) South

50. Pointing to a lady, a man said, “The son of her only brother is the brother of my wife”. How is lady is related to man?

(a) Mother’s sister

(b) Grandmother

(c) Sister of father-in-law

(d) Maternal Aunt

51. A family has a man, his wife, their four sons and their wives. The family of every son also 3 sons and one daughter. Find out the total number of male members in the whole family?

(a) 4

(b) 8

(c) 12

(d) 17

52. Five persons A, B, C, D and E are sitting in a circle facing centre. C is sitting immediate left of E. A is sitting in between and D. Who is sitting between B and A?

(a) C

(b) D

(c) E

(d) B

53. Five people A, B, C, D, E are seated about a round table facing outside the centre but not necessary in the same order. A sits at immediate right of E. C sits third to the left of D, who sits at the immediate right of A. How many persons are sitting between C & D?

(a) 1

(b) 2

(c) 3

(d) 4

54. Five friends A, B, C, D and E are sitting in a row facing east. A is sitting between C & D. B is second to the left C. Who is sitting at the south end?

(a) B

(b) E

(c) A

(d) D

55. Five persons A, B, C, D & E sitting on a bench. A is immediate right of B. E is immediate left of C and immediate right of A. B is the right of D. Which person is sitting in the middle of bench?

(a) B

(b) E

(c) A

(d) D

56. Given that

1. A is mother of B.
2. C is son of A.
3. D is brother of E.
4. E is daughter of B.

The grandmother of D is -

(a) A

(b) B

(c) C

(d) E

57. Read the following information and answer the question

'A+B' means 'A is the daughter of B'.

'A ×B' means 'A is the son of B'.

'A – B' means 'A is the wife of B'.

If P × Q-S, which of the following is true

(a) S is wife of B

(b) S is father of P

(c) P is daughter of Q

(d) Q is father of P

58. B is daughter of A. C is brother of B. C is the only son of D. C and E are married couple. F is the only son of E. Then how is F related to A?

(a) Grandson

(b) Father

(c) Brother

(d) Uncle

59. Give that X is mother of Y. Z is son of X. A is brother of B.B is daughter of Y. Who is grandmother of A?

(a) X

(b) Y

(c) A

(d) B

60. L is wife of N, P is son of N, K is brother of N and father of O. What is the relationship of P and O?

(a) Uncle

(b) Brother

(c) Cousin

(d) Nephew

61. Standard Error (SE) and square root of sample size are

(a) Directly proportional

(b) Equal

(c) Inversely proportional

(d) Not equal

62. The mean of three numbers is 135. Among the three numbers the biggest number is 180. The difference between the remaining two numbers is 25. Then the smallest number is

(a) 130

(b) 125

(c) 120

(d) 100

63. Out of 1000 persons 40% are female, others are male. In a marriage function, 300 persons enjoyed the song.30% of the people who had not enjoyed the song were female. What is the number of male, who did not enjoy the song in the function?

(a) 120

(b) 180

(c) 360

(d) 490

64. In tabular presentation of data, stub is __

(a) Left part of table, which provide the description of rows

(b) Right part of the table providing the description of the row

(c) Left part of the table providing the description of columns

(d) Right part of the table providing the description of columns

65. For open-end classification, which of the following is the best measure of central tendency?

(a) AM

(b) GM

(c) Median

(d) Mode

66. In case of an even number of observations which of the following is median?

(a) Any of the two middle-most value

(b) The simple average of these two middle values

(c) The weighted average of these two middle values

(d) Any of these

67. Non-probability Sampling is also known as:

(a) Stratified Sampling

(b) Simple Random Sampling

(c) Purposive or Judgment Sampling.

(d) Cluster Sampling

68. Two variables x and y are given by $y= 2x – 3$. If the median of x is 20, what is the median of y?

(a) 20

(b) 40

(c) 37

(d) 35

69. If the relationship between two variables u and v are given by $2u + v + 7 = 0$ and if the AM of u is 10, then the AM of v is

(a) 17

(b) –17

(c) –27

(d) 27

70. The appropriate measure of dispersion for open-end classification is

(a) Standard deviation

(b) Mean deviation

(c) Quartile deviation

(d) All these measures

71. If R_x and R_y denote ranges of x and y respectively where x and y are related by 3x+2y+10=0, what would be the relation between x and y?

(a) Rx = Ry

(b) 2 Rx= 3 Ry

(c) 3 Rx= 2 Ry

(d) Rx= 2 Ry

72. If x and y are related by 2x+3y+4 = 0 and SD of x is 9, then SD of y is

(a) 22

(b) 6

(c) 5

(d) 24

73. The quartiles of a variable are 45, 52 and 75 respectively. Its quartile deviation is

(a) 15

(b) 20

(c) 25

(d) 8.30

74. If x and y are related as 3x+4y = 20 and the quartile deviation of x is 16, then the quartile deviation of y is

(a) 16

(b) 14

(c) 10

(d) 12

75. If x and y are related by y = 2x+ 5 and the SD and AM of x are known to be 5 and 10respectively, then the coefficient of variation of y is

(a) 25

(b) 30

(c) 40

(d) 20

76. What is spurious correlation?

(a) It is a bad relation between two variables.

(b) It is very low correlation between two variables.

(c) It is the correlation between two variables having no causal relation.

(d) It is a negative correlation.

77. When r = 1, all the points in a scatter diagram would lie

(a) On a straight line directed from lower left to upper right

(b) On a straight line directed from upper left to lower right

(c) On a straight line

(d) Both (a) and (b).

78. If the coefficient of correlation between two variables is 0.8 then the percentage of variation unaccounted for is

(a) 70%

(b) 30%

(c) 51%

(d) 36%

79. If for two variable x and y, the covariance, variance of x and variance of y are 40, 16 and 256 respectively, what is the value of the correlation coefficient?

(a) 0.01

(b) 0.625

(c) 0.4

(d) 0.5

80. If the relation between x and u is $3x + 4u + 7 = 0$ and the correlation coefficient between x and y is –0.6, then what is the correlation coefficient between u and y?

(a) –0.6

(b) 0.8

(c) 0.6

(d) –0.8

81. What is the probability of occurrence of leap year having 53 Sunday?

(a) 1/7

(b) 2/7

(c) 3/7

(d) 4/7

82. What is the chance of picking a spade or an ace not of spade from a pack of 52cards?

(a) 4/13

(b) 2/13

(c) 3/26

(d) 3/18

83. Find the probability that a four-digit number comprising the digits 2, 5, 6 and 7 would be divisible by 4.

(a) 1/4

(b) 1/3

(c) 1/2

(d) 1

84. The probability that an Accountant's job applicant has a B. Com. Degree is0.85, that he is a CA is 0.30 and that he is both B. Com. and CA is 0.25 out of 500 applicants, how many would be B. Com. or CA?

(a) 0.25

(b) 0.30

(c) 0.10

(d) 0.90

85. Rupesh is known to hit a target in 5 out of 9 shots whereas David is known to hit the same target in 6 out of 11 shots. What is the probability that the target would be hit once they both try?

(a) 79/99

(b) 10/13

(c) 14/26

(d) 13/18

86. In connection with a random experiment, it is found that P(A) = 2/3, P(B) = 3/5 and P(AUB) = 5/6, find P(A'/B)

(a) 7/18

(b) 1/13

(c) 5/18

(d) 13/18

87. In a business venture, a man can make a profit of ₹ 50,000 or incur a loss of ₹ 20,000. The probabilities of making profit or incurring loss, from the past experience, areknown to be 0.75 and 0.25 respectively. What is his expected profit?

(a) ₹ 33,500

(b) ₹ 34,500

(c) ₹ 35,500

(d) ₹ 32,500

88. Find the probability of a success for the binomial distribution satisfying the following relation

4 P (x = 4) = P (x = 2) and having the parameter n as six.

(a) 1/3

(b) 1/2

(c) 1/5

(d) 1/8

89. An experiment succeeds thrice as after it fails. If the experiment is repeated 5times, what is the probability of having no success at all?

(a) 1/1023

(b) 1/1024

(c) 1/1005

(d) 1/1008

90. If the two quartiles of a normal distribution are 47.30 and 52.70 respectively, what is the mode of the distribution? Also find the mean deviation about median of thisdistribution.

(a) 3.80

(b) 3.40

(c) 3.20

(d) 4.20

91. X follows normal distribution with mean as 50 and variance as 100. What is P(x≥ 60)?

[Givenφ(1) = 0.8413]

(a) 0.20

(b) 0.40

(c) 0.16

(d) 0.30

92. Number of misprints per page of a thick book follows

(a) Normal distribution

(b) Poisson distribution

(c) Binomial distribution

(d) Standard normal distribution

93. If for a Poisson variable X, f(2) = 3 f(4), what is the variance of X?

(a) 2

(b) 4

(c) $\sqrt{2}$

(d) 3

94. If the points of inflexion of a normal curve are 40 and 60 respectively, then its mean is

(a) 40

(b) 45

(c) 50

(d) 60

95. Fisher's index number satisfies the _____ tests

(a) Time Reversal Test

(b) Factor Reversal Test

(c) both

(d) none

96. Fisher's ideal index number is

(a) The Median of Laspeyre's and Paasche's index numbers

(b) The Arithmetic Mean of Laspeyre's and Paasche's index numbers

(c) The Geometric Mean of Laspeyre's and Paasche's index numbers

(d) None of these

97. if r = 0.6 then coefficient of non-determination is

(a) 0.4

(b) -0.6

(c) 0.36

(d) 0.64

98. The Cost-of-Living Index (CLI) is always

(a) Weighted Index

(b) Price Index

(c) Quantity Index

(d) None of these

99. The Paasches and Fishers index numbers are 169 and 156 respectively, then Laspyre's Index number is

(a) 144

(b) 152

(c) 148

(d) 151.5

100. The whole sale price index number or agricultural commodities in a given region at a given date is 280. The percentage increase in prices of agricultural commodities over the base year is :

(a) 380

(b) 280

(c) 180

(d) 80