Mock Test Paper - Series I: April, 2024

Date of Paper: 1st May, 2024

Time of Paper: 2 P.M. to 4 P.M.

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. The students in three classes are in the ratio 2 : 3 : 5. If 40 students are increased in each class the ratio changes to 4 : 5 : 7. Originally the total number of students was

   (a) 180

   (b) 400

   (c) 100

   (d) 200

2. A bag contains coins of denominations 1 rupee , 2 rupee and 5 rupees . Their numbers are in the ratio 4:3:2 .If bag has total of Rs. 1800 then find the number of 2 rupee coins ?

   (a) 270

   (b) 230

   (c) 180

   (d) 210

3. 4 tables and 3 chairs together cost ₹ 2,250 and 3 tables and 4 chairs cost ₹ 1950. Find the cost of 2 chairs and I table.

   (a) ₹ 550

   (b) ₹ 1005

   (c) ₹ 750

   (d) None of these

4. One root of the equation: $x^2 – 2(5 + m) + 3(7 + m) = 0$ is reciprocal of the other. Find the value of m.

   (a) -20/3

   (b) 7

   (c) 1/7

   (d) 117

5. A small manufacturing firm produces two types of gadgets A and B, which are first processed in the foundry then sent to the machine shop for finishing. The number of man-hours of labour required in each shop for the production of each unit of A and B, and the number of man-hours the firm has available per week are as follows:

Gadget	Foundry	Machine-shop
A	10	5
B	6	4
Firm's capacity per week	1000	600

Let the firm manufactures x units of A and y units of B. The constraints are:

(a) $10x+6y\leq1000$, $5x+4y\geq600$, $x\geq0, y\leq0$

(b) $10x+6y\leq1000$, $5x+4y\leq600$, $x\geq0, y\geq0$

(c) $10x+6y\geq1000$, $5x+4y\leq600$, $x\leq0, y\leq0$

(d) $10x+6y\leq1000$, $5x+4y\geq600$, $x\leq0, y\leq0$

6. Sangeeta leaves from her home. She first walk 30 metres in North-West direction, and then 30m in South-West direction, next she walks 30 metres in South-East direction. Finally she turns towards her house. In which direction is she moving?

(a) North-West

(b) North-East

(c) South-East

(d) South-West

7. Rahim started from point X and walked straight 5 km. East, then turned left and walked straight 2 km. and again turned left and walked straight 7 km. In which direction is he from the point X ?

(a) North-East

(b) South-West

(c) South-East

(d) North-West

8. Find out the next number in the following series 7,11, 13, 17, 19, 23, 25, 29,?

(a) 30

(b) 31

(c) 32

(d) 33

9. If MACHINE is coded as 19 - 7 - 9 - 14 - 15 - 20 - 11, how will you code DANGER?

(a) 11-7-20-16-11-24

(b) 13-7-20-9-11-25

(c) 10-7-20-13-11-24

(d) 13-7-20-10-11-25

10. A, B, C, D, E and F are sitting around a round table. A is between E and F, E is opposite to D, and C is not in either of the neighbouring seats of E. Who is opposite to B ?

(a) C

(b) D

(c) F

(d) None of these

11. Pointing to a photograph, a man said to a woman “His mother is the only daughrt of your father “ How is the woman related to that person

(a) Daughter

(b) Sister

(c) Mother

(d) Wife

(12-13) Read the following information and answer the given below it :

(i) A is the father of C, But C is not his son,

(ii) E is the daughter of C. F is the spouse of A .

(iii) B is the brother of C. D is the son of B.

(v) G is the spouse of B. H is the father of G

12. Who is the grand mother of D?

(a) A

(b) C

(c) F

(d) H

13. Who is son of F

(a) B

(b) C

(c) D

(d) E

14. A is the father of C and D is the son of B. E is the brother of A . If C is the sister of D, how is B is related to E?

(a) Daugher

(b) Brother-in-law

(c) Husband

(d) Sister-in-law

15. If ′P+Q′ means 'P is the father of Q', 'P×Q' means 'P is the brother of Q', ′P−Q′ means 'P is the mother of Q', then which of the following is definitely true about ′C−A+B′?

(a) B is the son of A

(b) A is the son of C

(c) B is the father of C

(d) C is the mother of B

16. If a simple interest on a sum of money at 6% p.a. for 7 years is equal to twice of simple interest on another sum for 9 years at 5% p.a. The ratio will be:

(a) 2:15

(b) 7:15

(c) 15:7

(d) 1:7

17. How much money is required to be invested every year as to accumulate Rs,6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest [Given : $(1.1)^{10}$=259734

(a) ₹ 37,467

(b) ₹ 37,476

(c) ₹ 37,647

(d) ₹ 37,674

18. The Scarap value of machine valued at Rs,10,00,000 after 15 yaers of depreciation is 10% per annmum .

(a) ₹ 215891.13

(b) ₹ 205891.13

(c) ₹ 225891.13

(d) None

19. The effective annual rate of interest corresponding to nominal rate 6% p.a. payable quaterly is:

(a) 6.14%

(b) 6.07%

(c) 6.08%

(d) 6.09%

20. If the difference between the compound interest compounded annually and simple interest on a certain amount at 10% per annum for two years is ₹ 372, then the principal amount is.

(a) ₹ 37,000

(b) ₹ 37,200

(c) ₹ 37,500

(d) None of the above

21. The future value of an annuity of ₹ 1500 made annually for 5 years at an interest rate of 10% compounded annually is[Given that $(1.1)^5 = 1.61051$]

(a) 9517.56

(b) 9157.65

(c) 9715.56

(d) 9175.65

22. Find the present value of an annuity of ₹ 1,000 payable at the end of each year for 10 years. If rate of interest is 6% compounding per annum. (given $(1.06)^{-10} = 0.5584$):

(a) ₹ 7,360

(b) ₹ 8,360

(c) ₹ 12,000

(d) None of these.

23. Mr. A borrows 5,00,000 to buy a house.If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?

(a) ₹ 58239.84

(b) ₹ 58729.84

(c) ₹ 68729.84

(d) None of these

24. Suppose your mom decides to gift you ₹ 10,000 every year starting from today for the next sixteen years. You deposit this amount in a bank as and when you receive and get 8.5% per annum interest rate compounded annually. What is the present value of this money: [Given that P (15, 0.085) = 8.304236]

(a) ₹ 83,042

(b) ₹ 90,100

(c) ₹ 93,042

(d) ₹ 10,100

25. What will be the population after 3 years , when present population is 1,00,000 and the population increases at 3% in year 1st year , at 4% in second year and 5% in third year.

(a) 1,12,476

(b) 1,15,476

(c) 1,20,576

(d) 1,25,600

26. Find the present value of an annuity which pays 200 at the end of each 3 months for 10 years assuming money to be worth 5% converted quarterly?

(a) ₹ 3473.86

(b) ₹ 3108.60

(c) ₹ 6265.38

(d) None of these

27. The value of furniture depreciates by 10% a year, if the present value of the furniture in an office is ₹ 21870, calculate the value of furniture 3 years ago:

(a) ₹ 30,000

(b) ₹ 40,000

(c) ₹ 35,000

(d) ₹ 50,000

28. A sum of money, lent out at simple interest, doubles itself in 8 years. Find in how many years will the sum become triple (three times) of itself at the same rate per cent ?

(a) 16 years

(b) 15 years

(c) 20 years

(d) None.

29. $\int 2^{3x}.3^{2x}.5^{2x}dx$

(a) $\frac{2^{3x}.3^{2x}.5^{x}}{log(720)}$+c

(b) $\frac{2^{3x}.3^{2x}.5^{x}}{log(360)}$+c

(c) $\frac{2^{3x}.3^{2x}.5^{2x}}{log(1800)}$+c

(d) $\frac{2^{3x}.3^{2x}.5^{x}}{log(90)}$+c

30. $\int_1^4 (2x+5)\,dx$ and the value is

(a) 10

(b) 3

(c) 30

(d) none

31. The equation of the tangent to the curve, $x^3 - 2x + 3$, at the point (2, 7) is:

(a) y = 2x – 13

(b) y = 10x

(c) y = 10x – 13

(d) y = 10

32. If x = c.t, y = c/t, then dy/dx is equal to :

(a) 1/t

(b) $t.e^t$

(c) $-1/t^2$

(d) None of these

33. The letters of the word VIOLENT are arranged so that the vowels occupy even place only. The number of permutations is:

(a) 144

(b) 120

(c) 24

(d) 72

34. A garden having 6 tall trees in a row. In how many ways 5 children stand, one in a gap between the trees in order to pose for a photograph?

(a) 24

(b) 120

(c) 720

(d) 30

35. Find the number of arrangements in which the letters of the word ‘MONDAY’ be arranged so that the words thus formed begin with ‘M’ and do not end with ‘N’.

(a) 720

(b) 120

(c) 96

(d) None

36. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent ?

(a) 164

(b) 174

(c) 144

(d) 154

37. A Supreme Court Bench consists of 5 judges. In how many ways, the bench can give a majority division ?

(a) 10

(b) 5

(c) 15

(d) 16

38. If the pth term of an A.P. is ‘q’ and the qth term is ‘p’, then its rth term is:

(a) p + q + r

(b) p + q – r

(c) p – q – r

(d) p + q

39. Find the numbers whose GM is 5 and AM is 7.5:

(a) 12 and 13

(b) 13.09 and 1.91

(c) 14 and 11

(d) 17 and 19

40. If the sum of n terms of an A.P be $2n^2 + 5$ n, then its ‘n’ term is:

(a) 4n – 2

(b) 3n – 4

(c) 4n + 3

(d) 3n + 4

41. The first, second and seventh term of an AP. are in G.P. and the common difference is 2, the 2nd term of A.P. is :

(a) 5/2

(b) 2

(c) 3/2

(d) ½

42. Find the sum of all natural numbers between 250 and 1,000 which are exactly divisible by 3 :

(a) 1,56,375

(b) 1,56,357

(c) 1,65,375

(d) 1,65,357

43. On the set of lines, being perpendicular is a satisfies which property :

(a) Reflexive

(b) Symmetric

(c) Transitive

(d) None of these

44. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then (A – C) × B is:

(a) {(2, 2)(2, 4)(4, 2)(4, 4)(5, 2) (5, 4)}

(b) {(1, 2) (1, 4) (3, 2) (3, 4) (5, 2) (5, 4)}

(c) {(2, 2) (4, 2) (4, 4) (4, 5)}

(d) {(2, 2) (2, 4) (4, 2) (4, 4)}

45. Out of total 150 students, 45 passed in Accounts, 30 in Economics and 50 in Maths, 30 in both Accounts and Maths, 32 in both Maths and Economics, 35 in both Accounts and Economics, 25 students passed in all the three subjects. Find the numbers who passed atleast in anyone of the subjects:

(a) 63

(b) 53

(c) 73

(d) None.

46. Let R is the set of real numbers, such that the function f: R → R and g : R → R are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x – 3$. Find (fog) :

(a) $4x^2 + 6x + 1$

(b) $x^2 + 6x + 1$

(c) $4x^2 – 6x + 1$

(d) $x^2 – 6x + 1$

47. The ages of two persons are in the ratio 5:7. Eighteen years ago their ages were in the ratio of 8:13, their present ages (in years) are :

(a) 50,70

(b) 70,50

(c) 40,56

(d) None of these

48. A box contains ₹ 56 in the form of coins of one rupee, 50 paise and 25 paise. The number of 50 paise coin is double the number of 25 paise coins and four times the numbers of one rupee coins. The numbers of 50 paise coins in the box is

(a) 64

(b) 32

(c) 16

(d) 14

49. A man starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was ₹ 1,500 after 4 years of service and ₹ 1,800 after 10 years of service, what was his starting salary and what is the annual increment in rupees?

(a) ₹ 1,300, ₹ 50

(b) ₹ 1,100, ₹ 50

(c) ₹ 1,500, ₹ 30

(d) None

50. Find the positive value of k for which the equations: $x^2 + kx + 64 = 0$ and $x^2 – 8x + k = 0$ will have real roots:

(a) 12

(b) 16

(c) 18

(d) 22

51. Praveen is facing west. He turns 45° in the clockwise direction and then again another turns with 180° in the same direction i.e. clockwise direction, after that he turns 270° in the anti-clockwise direction. Which direction is he facing now ?

(a) North-West

(b) West

(c) South-West

(d) South

52. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?

(a) South

(b) South-West

(c) North-East

(d) North-West

53. In a straight line there are six persons sitting in a row. B is between F and D. E is between A and C. A does not stand next to F or D, C does not stand next to D. F is between which of the following persons?

(a) B and E

(b) B and C

(c) B and D

(d) B and A

54. Rashmi walked 2 km west of her house and then turned south covering 4 km. Finally, she moved 3 km towards east and then again 1 km west. How far is she from her initial position?

(a) 7 km

(b) 3 km

(c) 4 km

(d) 12 km

55. Five boys A, B, C, D and E are sitting in a row. A is to the right of B, and E is to the left of B but to the right of C. A is to the left of D. Who is second from the left end ?

(a) D

(b) A

(c) E

(d) B

56. Eight leaders P, Q, R, S, T, U, V and W are sitting on a bench facing towards North.

(i) T is fourth to the left of P

(ii) S is fourth to the right of W

(iii) U and R are not sitting at the ends, but they are neighbours of T and Q respectively.

(iv) P is next to the right of W and but left of Q.

Who are sitting at the extreme ends ?

(a) T and S

(b) P and Q

(c) U and R

(d) None

57. If $\log_4(x^2 + x) - \log_4(x + 1) = 2$ then the value of x is

(a) 2

(b) 3

(c) 16

(d) 8

58. If HEALTH is written as GSKZDG, then how will NORTH be written in that code?

(a) OPSUI

(b) GSQNM

(c) FRPML

(d) IUSPO

59. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code ?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

60. Find odd man out of the following:

(a) 15

(b) 25

(c) 37

(d) 49

61. Which of the following statement is true?

(a) Statistics is derived from the French word ‘Statistik’

(b) Statistics is derived from the Italian word ‘Statista’

(c) Statistics is derived from the Latin word ‘Statistique’.

(d) None of these

62. In tabulation, source of data, if any is shown in the :

(a) Stub

(b) Body

(c) Caption

(d) Footnote

63. From the following data 73, 72, 65, 41, 54, 80, 50, 46, 49, 53, find the number of class intervals if class length is given as 5,

(a) 6

(b) 5

(c) 7

(d) 8

64. The number of observations between 150 and 200 based on the following data is:

Value	More than 100	More than 150	More than 200	More than 250
No. of Observations	70	63	28	05

(a) 46

(b) 35

(c) 28

(d) 23

65. Data collected on religion from the census reports are:

(a) Primary data

(b) Secondary data

(c) Sample data

(d) (a) or (b)

66. The number of test of Adequacy in Index numbers:

(a) 2

(b) 3

(c) 4

(d) 5

67. Circular Test is satisfied by:

(a) Paasche's Index Number

(b) The simple geometric mean of price relatives and the weighted aggregative with fixed weights

(c) Laspeyre's Index Number

(d) None of these

68. In the data group Bowley's and Laspeyre's index number is as follows. Bowley's index number= 150, Laspeyre's index number = 180 then Paasche's index number is:

(a) 120

(b) 30

(c) 165

(d) None of these

69. If Fisher's index = 150 and Paasche's Index = 144, then Laspeyre's index is ____

(a) 147

(b) 156.25

(c) 104.17

(d) 138

70. Monthly salary of an employee was ₹ 10,000 in the year 2010 and it was increased to ₹ 20,000 in the year 2023 while the consumer price index number is 240 in year 2023 with the base year 2010, what should be his salary in comparison of consumer price index in the year 2023 ?

(a) 2,000

(b) 16,000

(c) 24,000

(d) None of these

71. Parameter is a characteristic of:

(a) Population

(b) Sample

(c) Probability distribution

(d) Both (a) & (b)

72. The Interval $(\mu - 3\sigma, \mu + 3\sigma)$ covers

(a) 95% area of normal distribution

(b) 96% area of normal distribution

(c) 99% area of normal distribution

(d) All but not 0.27% area of a normal distribution

73 The overall percentage of failure in a certain examination is 0.30. What is the probability that out of a group of 6 candidates at least 4 passed the examination?

(a) 0.74

(b) 0.71

(c) 0.59

(d) 0.67

74. In a certain manufacturing process, 5% of the tools produced turn out to be defective. Find the probability that in a sample of 40 tools, at most 2 will be defective: [Given: $e^{-2} = 0.135$]

(a) 0.555

(b) 0.932

(c) 0.785

(d) 0.675

75. For binomial distribution E(x) = 2, V(x) = 4/3. Find the value of n.

(a) 3

(b) 4

(c) 5

(d) 6

76. If standard deviation of a poisson distribution is 2 , then its Mode

(a) 2

(b) 4

(c) 3 and 4

(d) 5

77. Consumer price index is commonly known as

(a) Chain Based index

(b) Ideal index

(c) Wholesale price index

(d) Cost of living index.

78. 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

79. If r is the karl pearson's coefficient of correlation in a bivariate distribution the two regression lines are at right angles when _____

(a) $r = \pm 1$

(b) $r = 0$

(c) $r = \pm\infty$

(d) None

80. If r = 0.6 then the coefficient of non-determination is _____

(a) 0.4

(b) -0.6

(c) 0.36

(d) 0.64

81. The correlation coefficient between x and y is -1/2. The value of b_{xy} = -1/ 8. Find b_{yx}.

(a) -2

(b) -4

(c) 0

(d) 2

82. Out of the following which one affects the regression co-efficient:

(a) Change of origin only

(b) Change of scale only

(c) Change of scale & origin both

(d) Neither change of origin nor change of scale

83. If Y is dependent variable and X is Independent variable and the S.D of X and Y are 5 and 8 respectively and Co-efficient of co-relation between X and Y is 0.8. Find the Regression co-efficient of Y on X.

(a) 0.78

(b) 1.28

(c) 6.8

(d) 0.32

84. The theory of compound probability states that for any two events A and B:

(a) $P(A \cap B) = P(A) \times P(B)$

(b) $P(A \cap B) = P(A) \times P(B/A)$

(c) $P(A \cup B) = P(A) \times P(B/A)$

(d) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

85. Three identical dice are rolled. The probability that the same number will appear on each of them is:

(a) 1/6

(b) 1/12

(c) 1/36

(d) 1

86. If 10 men, among whom are A and B, stand in a row, what is the probability that there will be exactly 3 men between A and B ?

(a) 11/15

(b) 4/15

(c) 1/15

(d) 2/15

87. P(A) = 2/3; P(B) = 3/5; $P(A \cup B) = 5/6$. Find P(B/A)

(a) 11/20

(b) 13/20

(c) 13/18

(d) 15/20

88. The odds in favour of A solving a problem is 5:7 and Odds against B solving the same problem is 9:6. What is the probability that if both of them try, the problem will be solved?

(a) 117/180

(b) 181/200

(c) 147/180

(d) 119/180

89. A bag contains 15 one rupee coins, 25 two rupee coins and 10 five rupee coins. If a coin is selected at random from the bag, then the probability of not selecting a one rupee coin is:

(a) 0.30

(b) 0.70

(c) 0.25

(d) 0.20

90. If two variables x and y are related by 2X + 3Y – 7 = 0 and the mean and mean deviation about mean of X are 1 and 0.3 respectively, then the co-efficient of mean deviation of Y about mean is .

(a) -5

(b) 4

(c) 12

(d) 50

91. If X and Y are related as 3X – 4Y = 20 and the quartile deviation of X is 12, then the quartile deviation of Y is :

(a) 14

(b) 15

(c) 16

(d) 9

92. Suppose a population A has 100 observations 101,102,103,200 and another population B has 100 observations 151, 152, 153, ……. 250. If VA and VB represents the variance of the two populations respectively, then V_A / V_B = : _____

(a) 9/4

(b) 1

(c) 4/9

(d) 2/3

93. The rate of returns from three different shares are 100%, 200% and 300% respectively. The average rate of retuen will be.

(a) 350%

(b) 233.33%

(c) 200%

(d) 300%

94. If variance of x is 5, then find the variance of (2 – 3x)

(a) 10

(b) 45

(c) 5

(d) -13

95. The sum of the squares of deviations of a set of observations has the smallest value, when the deviations are taken from their

(a) A. M.

(b) H. M.

(c) G. M.

(d) None

96. For a moderately skewed distribution, which of the following relationship holds?

(a) Mean – Median = 3 (Median – Mode)

(b) Median -Mode = 3 (Mean -Median)

(c) Mean – Mode = 3 (Mean – Median)

(d) Mean – Median 3 (Mean – Mode)

97. The mean salary for a group of 40 female workers is ₹ 5200 per month and that for a group of 60 male workers is ₹ 6800 per month. What is the combined salary ?

(a) ₹ 6160

(b) ₹ 6280

(c) ₹ 6890

(d) ₹ 6920

98. The mean weight of 15 students is 110 kg. The mean weight of 5 of them is 100 kg. and that of another five students is 125 kg., then the mean weight of the remaining students is:

(a) 120

(b) 105

(c) 115

(d) None of these

99. If the difference between mean and mode is 69, then the difference between Mean and Median will be _____

(a) 63

(b) 31.5

(c) 23

(d) None of the above

100. The average age of 15 students is 15 years. Out of these the average age of 5 students is 14 years and that of other 9 students is 16 years, then the age of 15^{th} student is _____

(a) 11 years

(b) 14 years

(c) 15 years

(d) None of these

Mock Test Paper - Series II: May, 2024

Date of Paper: 27th May, 2024

Time of Paper: 2 P.M. to 4 P.M.

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. If 'GOAL' is coded as 'HPBM' and 'FROCK' is coded as 'GSPTL' then how will 'LOFAR' be coded?

   (a) MPGZO

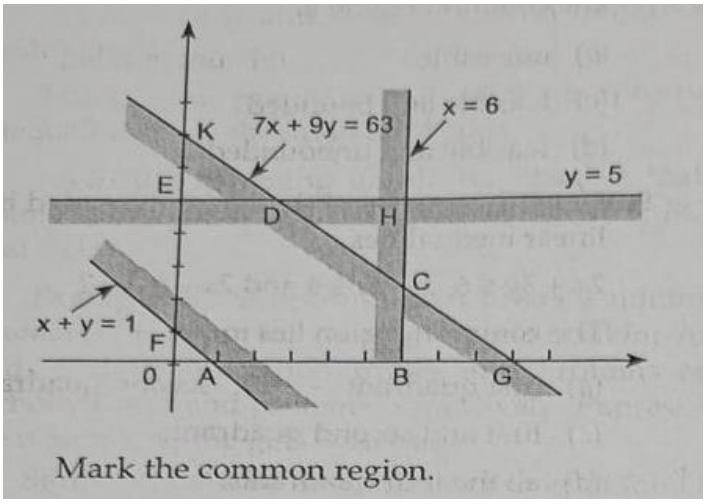
   (b) MNEBS

   (c) MPGBS

   (d) MPEBR

2. Graph of the following linear inequalities :

   $x+y\geq 1$, $y\leq 5$, $x\leq 6$, $7x+9y\leq 63$, $x\geq 0$, $y\geq 0$ is given below;



   (a) DCHAD

   (b) BCGB

   (c) ABCDEFA

   (d) EDKE

3. If mean and variance are 5 and 3 respectively then relation between p and q is :

   (a) P > q

   (b) p < q

   (c) p = q

   (d) p is symmetric

4. The expenditues and savings of a person are in the ratio 4:1. If his savings are increased by 25% of his income , then what is the new ratio of his expenditure and savings ?

   (a) 11:9

   (b) 8:5

   (c) 7:5

   (d) 7:4

5. The sum of mean and SD of a series is a + b, if we add 2 to each observation of the series then the sum of mean and SD is :

   (a) a + b + 2

   (b) 6 – a + b

   (c) 4 + a – b

   (d) a + b + 4

6. What is the mean of X having the following density function?

   $f(x) = \frac{1}{\sqrt[4]{2\pi}} e^{\frac{-(x-10)^2}{32}}$ for - ∞ < x < ∞

   (a) 4

   (b) 10

   (c) 40

   (d) None of these

7. In a Poisson distribution if P(x=4) = P(x= 5) then the parameter of Poisson distribution is:

   (a) $\frac{4}{5}$

   (b) $\frac{5}{4}$

   (c) 4

   (d) 5

8. Two events A and B are such that they do not occur simultaneously then they are called _____ events.

   (a) Mutually exhaustive

   (b) Mutually Exclusive

   (c) Mutually Independent

   (d) Equally Likely

9. Data are said to be _____ if the investigator himself is responsible for the collection of data.

   (a) Primary Data

(b) Secondary Data

(c) Mixed of Primary and Secondary Data

(d) None

10. A suitable graph for representing the portioning of total into sub parts in statistics is:

(a) A Pictograph

(b) A Pie Chart

(c) An Ogive

(d) A Histogram

11. Ram is known to hit a target in 2 out of 3 shots whereas Shyam is known to hit the same target in 5 out of 11 shots. What is the probability that the target would be hit if they both try?

(a) $\frac{9}{11}$

(b) $\frac{6}{11}$

(c) $\frac{10}{33}$

(d) $\frac{3}{11}$

12. If from a population with 25 members, a random sample without replacement of 2 members is taken, the number of all such samples is

(a) 300

(b) 625

(c) 50

(d) 600

13. The sum of two numbers is 75 and their difference is 20. Find the difference of their squares.

(a) 1500

(b) 1600

(c) 1550

(d) None of these

14. A room has 10 doors. In how many ways can a man enter the room by one door and come out by a different door.

(a) 90

(b) 100

(c) 50

(d) None of these

15. The average of marks obtained by 120 students in a certain examination is 135. If the average marks of passed students is 39 and that of the failed students is 15; what is the number of students who passed in the examination?

(a) 100

(b) 150

(c) 200

(d) None of these

16. If $\log \frac{a-b}{2} = \frac{1}{2}$ (log a + log b), the value of $a^2 + b^2$ is

(a) 6ab

(b) 8ab

(c) $6a^2 6^2$

(d) None of these

17. In an election, there are five candidates contesting for three vacancies; an elector can vote any number of candidates not exceeding the number of vacancies. In how many ways can one cast his votes?

(a) 12

(b) 14

(c) 25

(d) None of these

18. The number of ways that 12 prizes can be divided among 4 students so that each may have 3 prizes is:

(a) 15,400

(b) 15,000

(c) 14,400

(d) 369600

19. Five balls of different colours are to be placed in three boxes of different sizes. Each box can hold all the five balls. In how many different ways can we place the balls so that no box remains empty?

(a) 100

(b) 120

(c) 150

(d) None of these

20. Find the sum of the series. 243 + 324 + 432 + ... to n terms

(a) $3^6\left(\frac{4^n}{3^n} - 1\right)$

(b) $3^4\left(\frac{4^n}{3^n}-1\right)$

(c) $3^6\left(\frac{3^n}{4^n}-1\right)$

(d) None of these

21. The sum of the first eight terms of a G.P. is five times the sum of the first four terms; then the common ratio is –

(a) $\sqrt{2}$

(b) $-\sqrt{2}$

(c) $\pm\sqrt{2}$

(d) None of these

22. The sum of the following series 4 + 44 + 444 + …… to n term is:

(a) $\frac{4}{9}\left[\frac{10(10^n-1)}{9}-n\right]$

(b) $\frac{4}{9}\left[\frac{10(10^n-1)}{9}+n\right]$

(c) $\frac{10(10^n-1)}{9}+n$

(d) None of these

23. The Arithmetic Mean between two numbers is 15 and their G.M. is 9; then the numbers are –

(a) 27,3

(b) 9, 9

(c) 16, 9

(d) None of these

24. Find the gradient of curve $y = 3x^2-5x+4$ at the point (1, 2)

(a) 1

(b) 3

(c) 4

(d) 5

25. Evaluate: $\int_0^5 \frac{x^2}{x^2+(5-x)^2}dx$

(a) 0

(b) 1

(c) -1

(d) none of these

26. If $f'(x) = 3x^2 + 2$ & f(0) = 0 then find f(2).

(a) 8

(b) 10

(c) 12

(d) none of these

27. A box contains 7 red, 6 white and 4 blue balls. How many selections of three balls can be made so that none is red?

(a) 90

(b) 120

(c) 48

(d) None of these

28. The number of times a particular item occurs in a given data is called its

(a) Variation

(b) Frequency

(c) Cumulative frequency

(d) None of these

29. If the width of each of ten classes in a frequency distribution is 2.5 and the lower class boundary is 5.1, then the upper class boundary of the highest class is

(a) 30.1

(b) 31.1

(c) 30

(d) 27.6

30. Let L be the lower class boundary of a class in a frequency distribution and m be the mid point of the class. Which one of the following is the higher class boundary of the class?

(a) $m + \frac{m+2}{2}$

(b) $L + \frac{m+L}{2}$

(c) 2m–L

(d) m – 2L

31. The mean of the values of 1, 2, 3 ……, n with respective frequencies x, 2x, 3x, …… nx is

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

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

(c) $\frac{2n+1}{3}$

(d) $\frac{2n+1}{6}$

32. The correlation between two variables x and y is found to be 0.4. What is the correlation between 2x and (–y) ?

(a) 0.4

(b) –0.4

(c) 0.6

(d) None of these

33. Correlation Co-efficient is _____ of the units of measurements

(a) Dependent

(b) Independent

(c) both

(d) none of these

34. 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

35. The coefficient of rank correlation of marks obtained by 10 students in English and Economics was found to be 0.5, it was later discovered that the difference in ranks in the two subjects obtained by one student was wrongly taken as 3 instead of 7. Find correct coefficient of rank correlation.

(a) 0.514

(b) 0.364

(c) 0.15

(d) 0.260

36. If r = 0.5, $\sum xy$ = 120, σ_y = 8, $\sum x^2$ = 90, then value of n is equal to _____

(a) 5

(b) 10

(c) 15

(d) 20

37. For a (m×n) classification of bivariate data, the maximum number of conditional distributions is

(a) p

(b) p+q

(c) pq

(d) p

38. _____ is an extension of time reversal test.

(a) Factor reversal test

(b) Circular test

(c) Unit test

(d) None of these

39. Fisher's method for construction of Index Numbers uses_____

(a) Geometric Mean

(b) Harmonic Mean.

(c) Median

(d) HM

40. The consumer price index in 1990 increases by 80- per cent as compared to the base 1980. A person in 1980 getting ₹ 60,000 per annum should now get

(a) ₹ 1,08,000 per annum

(b) ₹ 82,000 per annum

(c) ₹ 64,000 per annum

(d) None of these

41. If 'INSURE' is coded as 951395, then how will 'PATRIOT' be coded?

(a) 7126299

(b) 7129926

(c) 7129962

(d) 7129692

42. If in a certain code '493' means 'Friendship difficult challenge', '961', means, 'Struggle difficult Exam., and '178' means 'Exam believable subject', then which digit is used for 'believable'?

(a) 7 or 8

(b) 7 or 9

(c) 8

(d) 8 or 1

43. In the following series, which number will replace the question mark:

23, 29, 31, 37, 41, 43, ?

(a) 45

(b) 53

(c) 47

(d) 49

44. In the following letter-series some letters are missing. The missing letters are given in the proper sequence as one of the alternatives. Find the correct alternative.

ab—abcab—abc—bca—c

(a) abac

(b) bcac

(c) ccab

(d) bbac

45. A and B both are children of C. If C is the mother of A, A is the son of C but B is not the daughter of C, then how are A and B mutually related?

(a) A is the brother of B

(b) A is the nephew of B

(c) A is the sister of B

(d) A is the cousin of B

46. A husband and wife had five married sons and each of these had four children. How many members are there in the family?

(a) 50

(b) 40

(c) 32

(d) 36

47. Pointing to the lady in the photograph , Seema said, "Her son's father is the son-in-law of my mother." How is Seema related to the lady?

(a) Sister

(b) Mother

(c) Cousin

(d) Aunt

(48-49).Each of these questions is based on the following information:

P % Q means P is the father of Q.

P @ Q means P is the sister of Q.

P $ Q means P is the brother of Q.

P * Q means P is the wife of Q.

48. In the expression F $ D % K @ H * R, how is D related to R?
    (a) Father
    (b) Mother
    (c) Sister
    (d) Father in law

49. In the expression A % B @ K * H % P, how is B related to P?
    (a) Aunt
    (b) Cousin
    (c) Uncle
    (d) Daughter

50. The length and breadth of a room are 8 m and 6 m respectively. A cat runs along all the four walls and finally along a diagonal order to catch a rat. How much total distance is covered by the cat?
    (a) 10 m
    (b) 14 m
    (c) 38 m
    (d) 48 m

51. If A x B means A is to the south of B; A + B means A is to the north of B; A % B means A is to the east of B; A - B means A is to the west of B; then in P % Q + R - S, S is in which direction with respect to Q?
    (a) South-West
    (b) South-East
    (c) North-East
    (d) North-West

52. P started from his house towards west. After walking a distance of 25 m. He turned to the right and walked 10 m. He then again turned to the right and walked 15 m. After this he is to turn right at 1350 and to cover 30 m. In which direction should he go?
    (a) West
    (b) South
    (c) South-West
    (d) South-East

53. A man is facing north. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 45 degree in the anticlockwise direction. Find which direction he is facing now ?

(a) North

(b) East

(c) West

(d) South

54. A child is looking for his father. He went 90 meters in the east before turning to his right. He went 20 meters before turning to is right again to look for his father at his uncle's place 30 meters from this point. His father was not there. From there, he went 100 meters to his north before meeting his father in a street. How far did the son meet his father from starting point ?

(a) 80 m

(b) 90 m

(c) 100 m

(d) 110 m

(55-56) A, B, C, D, E, F and G arc sitting in a straight line facing north, but not necessarily in the same order. There is only one person between F and C. E sits between A and D. There are only two persons between E and G. F sits on the immediate left of A, who sits in the middle of the row.

55. How many persons are there between E and F

(a) 1

(b) 2

(c) 3

(d) 4

56. Who among the following sit at the extreme ends on the row ?

(a) D, F

(b) G,C

(c) B, C

(d) None of these

57. Who among the following sits to the immediate right of D

(a) G

(b) E

(c) F

(d) B

58. In a line, P is sitting 13th from left. Q is sitting 24th from the right and 3rd left from P. How many people are sitting in the line?

(a) 34

(b) 31

(c) 32

(d) 33

59. Four ladies A, B, C and D and four gentlemen E, F, G and H are sitting in a circle round a table facing each other.

Directions:

(1) No two ladies or two gentlemen are sitting side by side.

(2) C, who is sitting between G and E is facing D.

(3) F is between D and A and is facing G.

(4) H is to the right of B.

Who are immediate neighbours of B?

(a) G and H

(b) F and H

(c) E and F

(d) E and H

60. If the mean deviation of a normal variable is 16, what is its quartile deviation?

(a) 10

(b) 13.50

(c) 15

(d) 12.50

61. An Ogive can be prepared in _____ different ways.

(a) 2

(b) 3

(c) 4

(d) 5

62. _____ is an absolute measure of dispersion.

(a) Range

(b) Mean Deviation

(c) Stnadrd Deviation

(d) All the above

63. The wages of 8 workers expressed in rupees are 42, 45,49,38,56,54,55,47. Find median wage?

(a) 47

(b) 48

(c) 49

(d) 50

64. If the Standard Deviation of 10 observations is 4 and if each item is divided by – 2 then Standard Deviation of new series is

(a) 2

(b) –2

(c) 4

(d) None of these

65. If the relationship between x and y is given by 4x– 6y =13 and if the median of x is 16. Find median of y.

(a) 7.50

(b) 8

(c) 8.50

(d) none of these

66. Two variables x and y are related by 5x+ 2y+ 5 = 0 and $\bar{x} = 5$, then $\bar{y}$ is

(a) 10

(b) -10

(c) 15

(d) -15

67. Find Q_1 for the following observations: 7,9,5,4,10,15,14,18,6,20

(a) 4.75

(b) 5.25

(c) 5.75

(d) 6.25

68. _____ is the entire upper part of the table which includes columns and sub–column numbers, unit(s) measurement.

(a) Sub

(b) Box-head

(c) Body

(d) Caption

69. If P(A) = $\frac{1}{2}$; P(B) = $\frac{1}{3}$ and P($A \cap B$) = $\frac{1}{4}$ then the value of $P(\bar{A} \cap \bar{B})$ is

(a) $\frac{5}{12}$

(b) $\frac{7}{12}$

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

(d) None of these

70. From the following probability distribution table, find E(x).

x:	1	2	3
f(x):	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$

(a) 1

(b) 1.50

(c) 1.67

(d) None of these

71. In a box carrying one dozen of oranges, one third has become bad. If 3 oranges are taken out from the box at random, what is the probability that at least one orange out of the three oranges picked up is good?

(a) $\frac{54}{55}$

(b) $\frac{1}{55}$

(c) $\frac{45}{50}$

(d) None of these

72. Find the effective rate of interest at 10% p.a. when interest is payable quarterly.

(a) 10.38%

(b) 5%

(c) 5.04%

(d) 4%

73. Arslan invested ₹ 10,000 at 8% per annum compound quarterly, then the value of the investment after 2 years is [given $(1.02)^8$ = 1.171659]

(a) ₹ 11,716.59

(b) ₹ 10,716.59

(c) ₹ 117.1659

(d) None of the above

74. The future value of an annuity of ₹ 1,000 made annually for 5 years at the interest of 14% compounded annually is:

(a) ₹ 5,610

(b) ₹ 6,610

(c) ₹ 6,160

(d) ₹ 5,160

75. A man invests an amount of ₹ 15,860 in the names of his three sons A, B and C in such a way that they get the same interest after 2,3 and 4 years respectively. If the rate of interest is 5%, then the ratio of amount invested in the name of A, B and C is.

(a) 6 : 4 : 3

(b) 3 : 4 : 6

(c) 30 : 12 : 5

(d) None of the above

76. What annual payment will discharge a debt of ₹ 770 due in years, the rate of interest being 5% per annum?

(a) ₹ 150

(b) ₹ 140

(c) ₹ 130

(d) None of these

77. In _____ receipts / payments takes place forever.

(a) Annuity

(b) Perpetuity

(c) Annuity regular

(d) Annuity due

78. Present value of a scooter is ₹ 7,290 if its value decreases every year by 10% then its value before 3 years is equal to:

(a) 10,000

(b) 10,500

(c) 20,000

(d) 20,5000

79. How much amount is required to be invested every year so as to accumulate ₹ 3,00,000 at the end of 10 years, if interest is compounded annually at 10%?

(a) ₹ 18,823.65

(b) ₹ 18,000

(c) ₹ 18,728.65

(d) ₹ 18,882.65

80. The relation between two variables is 2x–3y+12=0. If mean deviation of y is 6 then mean deviation of x is

(a) 9

(b) 6

(c) 3

(d) None of these

81. A company may obtain a machine either by leasing it for 5 years (useful life) at an annual rent of Rs. 2,000 or by purchasing the machine for Rs. 8,100. If the company can borrow money at 18% per annum, which alternative is preferable?

(a) Leasing

(b) Purchasing

(c) Can't say

(d) None of these

82. The time by which a sum of money is 8 times of itself if it doubles itself in 15 years.

(a) 42 years

(b) 43 years

(c) 45 years

(d) 46 years

83. Mr. X invests 'P' amount at Simple Interest rate 10% and Mr. Y invests 'Q' amount at Compound Interest rate 5% compounded annually. At the end of two years both get the same amount of interest, then the relation between two amounts P and Q is given by:

(a) $P = \frac{41Q}{80}$

(b) $P = \frac{41Q}{40}$

(c) $P = \frac{41Q}{100}$

(d) $P = \frac{41Q}{200}$

84. In what time will a sum of money double its y at 6.25% p.a. simple interest?

(a) 5 years

(b) 8 years

(c) 12 years

(d) 16 years

85. If two variables x and y are related by 2x and 3y – 7 = 0 and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the co-efficient of mean deviation of y about mean is:

(a) -5

(b) 4

(c) 12

(d) 50

86. Which of the following result hold for a set of distinct positive observations?

(a) A.M. > G.M. > H.M.

(b) G.M. > A.M. > H.M.

(c) G.M. > A.M. > H.M.

(d) G.M. > A.M. > H.M.

87. For a set of 100 observations, taking assumed mean as 4, the sum of the deviations is -11 cm, and the sum of the squares of these deviations is 257 cm2. The coefficient of variation is:

(a) 41.13%

(b) 42.13%

(c) 40.13%

(d) None

88. _____ & _____ are called ratio averages:

(a) H.M & G.M

(b) H.M. & A.M.

(c) A.M. & G.M.

(d) None

89. If X and Y are two random variables then v(x+y) is:

(a) v (x) + v(y)

(b) v(x) + v(y) – 2 v (x,y)

(c) v(x) + v(y) + 2 v (x,y)

(d) v (x) – v (y)

90. Mean and S.D. of x is 50 and 5 respectively, Find mean and S.D. of $\frac{x-50}{5}$

(a) (1,0)

(b) (0,1)

(c) (1,-1)

(d) (0,- 1)

91. A letter is taken out at random from the word RANGE and another is taken out from the word PAGE. The probability that they are the same letters is :

(a) 1/20

(b) 3/20

(c) 3/5

(d) ¾

92. A bag contains 8 red and 5 white balls. Two successive draws of 3 balls are made without replacement. The probability that the first draw will produce 3 white ball and second 3 red balls is :

(a) 6/255

(b) 5/548

(c) 7/429

(d) 3/233

93. Daily demand for calculators is having the following probability distribution:

Demand	1	2	3	4	5	6
Probability:	0.10	0.15	0.20	0.25	0.18	0.12

Determine the variance of the demand.

(a) 2.54

(b) 2.93

(c) 2.22

(d) 2.19

94. One Card is drawn from pack of 52, what is the probability that it is a king or a queen?

(a) 11/13

(b) 2/13

(c) 1/13

(d) None of these

95. Let R is the set of real numbers such that the function f : R $\rightarrow$ R and g : R $\rightarrow$ R are defined by by f(x) = x^2+3x+1 and g(x) = 2x-3. Find (fog):

(a) $4x^2$+6x+1

(b) x^2+6x+1

(c) $4x^2$-6x+1

(d) x^2- 6x+1.

96. In a town of 20,000 families it was found that 40% families buy newspaper A, 20% families buy newspaper B and 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C. If 2% families buy all the three newspaper, then the number of families which buy A only is:

(a) 6600

(b) 6300

(c) 5600

(d) 600.

97. Given the function f(x) = (2x +3), then the value of f(2x)-2f(x) + 3 will be:

(a) 3

(b) 2

(c) 1

(d) 0

98. if (x+1), 3x (4x+2) are in A.P. Find the value of x

(a) 2

(b) 3

(c) 4

(d) 5

99. Divide 144 into three parts which are in AP and such that the largest is twice the smallest, the smallest of three numbers will be:

(a) 48

(b) 36

(c) 13

(d) 32

100. Find the variance of binomial distribution with n = 10, p = 0.3

(a) 2.1

(b) 3

(c) 7

(d) None of these

Mock Test Paper - Series III: June, 2024

Date of Paper: 10th June, 2024

Time of Paper: 2 P.M. to 4 P.M.

FOUNDATION COURSE

PAPER – 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. P, Q and R three cities. The ratio of average temperature between P and Q is 11: 12 and that between P and R is 9:8. The ratio between the average temperature Q and R

   (a) 22 : 27

   (b) 27 : 22

   (c) 32 : 33

   (d) none of these

2. The third proportional between (a^2-b^2) and $(a+b)^2$ is :

   (a) $\frac{a+b}{a-b}$

   (b) $\frac{a-b}{a+b}$

   (c) $\frac{(a-b)^2}{a+b}$

   (d) $\frac{(a+b)^3}{a-b}$

3. If 8th term of an AP is 15, the Sum of the 15 its term is

   (a) 15

   (b) 0

   (c) 225

   (d) 225/2

4. For what values of x, the number $-\frac{2}{7}, x, -\frac{7}{2}$ are in G.P.?

   (a) $\pm$ 1

   (b) $\pm$ 3

   (c) $\pm$ 2

   (d) none of these

5. For what value of x; the sequence x+1, 3x, 4x+2 are in AP?

   (a) 3

   (b) 2

   (c) 4

   (d) 5

6. If $a^{1/x} = b^{1/y} = c^{1/z}$ and a,b,c are in GP then x, y, z are in

   (a) AP

   (b) GP

   (c) HP

   (d) AGP

7. The derivative of $e^x \log x$

   (a) $\frac{e^x}{x}(1+x\log x)$

   (b) $\frac{e^x}{x}(1+\log x)$

   (c) $(1+\log x)$

8. If y = $\sqrt{\frac{1-x}{1+x}}$ then $(1-x^2)\frac{dy}{dx}$ =

   (a) y

   (b) -x

   (c) -y

   (d) 0

9. Find the gradient of the curve $y = 3x^2-6x+4$ at the point (1, 2)

   (a) 1

   (b) -1

   (c) 0

   (d) 2

10. The equation of the curve in the form y = f(x) if the curve passese through the point (1, 0) and Find f'(x) = 2x-1 is

    (a) $y = x^{2-}x$

    (b) $x= y^2-y$

    (c) $y = x^2$

    (d) none of these

11. $\int \frac{1}{x \log x}\, dx$ =?

(a) log|x| + c

(b) log |logx| + c

(c) (logx)2 + c

(d) none of these

12. $\int_1^2 \frac{2x}{1+x^2} dx$ is equal to

(a) $\log_e(5/2)$

(b) $\log_e 5 - \log_e 2 + k$

(c) $\log_e(2/5)$

(d) none of these

13. Find *f o g* for the functions f (x) = x^8, g(x) = $2x^2+1$

(a) $x^8 (2x^2+1)$

(b) x^8

(c) $2x^2+1$

(d) $(2x^2+1)^8$

14. The number of proper subsets of the set {3, 4, 5, 6, 7} is

(a) 32

(b) 31

(c) 30

(d) 25

15. On the sets of lines in a plane the Relation “is perpendicular to” is

(a) Reflexive

(b) Symmetric

(c) Transitive

(d) none of these

16. In how many ways 3 prizes out of 5 can be distributed amongst 3 brothers equally

(a) 10

(b) 45

(c) 60

(d) 120

17. There 12 questions to be answered to be Yes or No. How Many ways this can be answered -

    (a) 1021

    (b) 2048

    (c) 4096

    (d) None of the above

18. $15C_{3r} = 15\ C_{r+3,}$ then r is equal to

    (a) 2

    (b) 3

    (c) 4

    (d) 5

19. A polygon has 44 diagonals then the number of sides are

    (a) 6

    (b) 7

    (c) 8

    (d) 11

20. The number of ways of painting the six faces of a cube with six different given colours is

    (a) 1

    (b) 720

    (c) 30

    (d) 15

21. How many Six-digit telephone numbers can be formed by using 10 distinct digits

    (a) 10^8

    (b) 6^{10}

    (c) $10C_9$

    (d) $10P_6$

22. $nC_1+nC_2+nC_3+$…….=

    (a) 2^n-1

    (b) 2^n

    (c) 2^n+1

    (d) none of these

23. The value of $\log_{0.1} 0.001$ =

(a) 3

(b) 2

(c) 4

(d) 1/3

24. if $\log_4 x = -3/2$. Then x is

(a) 1/8

(b) ¼

(c) ½

(d) 1/3

25. A number consists of two digits. The digits in tens place is 3 times the digit in the unit's place. If 54 is subtracted from the digits are reversed. The number is

(a) 39

(b) 92

(c) 93

(d) 94

26. The equation $x^2 - (P+4)x + 2P+5 = 0$ has equal roots

The value of p is

(a) 2

(b) -2

(c) ± 2

(d) 3

27.

x	5	6	7	8
y	11	13	15	17

In the above table corresponding values of two variable x and y have been given. Which of the following equations establishes the relationship between the two variables?

(a) y = 3x+2

(b) y = 2x–1

(c) y = 2x+1

(d) y = 3x+1

28. A manufacturer produces two items A and B. He has `10,000 to invest and a space to store 100 its ms. A table costs him `400 and a chair `100. Express this in the form of linear inequalities.

(a) $x + y \leq 100,\ 4x + y \leq 100,\ x \geq 0,\ y \geq 0$

(b) $x + y \leq 1000,\ 2x + 5y < 1000,\ x \geq 0,\ y \geq 0$

(c) $x + y > 100,\ 4x + y \geq 100,\ x \geq 0,\ y \geq 0$

(d) none of these

29. The difference between compound and simple interest at 5% per annum for 4 years on Rs. 20,000 is -

(a) 250

(b) 277

(c) 300

(d) 310

30. In how many years will a sum of money double at 5% p.a compounded interest?

(a) 15 years 3 months

(b) 14 years 2 months

(c) 14 years 3 months

(d) 15 years 3 months

31. A machine worth Rs. 4,90,740 is depreciated at 15% of its opening value each year. When would its value reduce by 90%?

(a) 11 years 6 months

(b) 11 years 7 months

(c) 11 years 8 months

(d) 14 years 2 months approximately

32. Assuming, that discount rate is 7% per annum, how much would you pay to receive Rs.50, growing at 5%, annually, forever.

(a) 2500

(b) 3000

(c) 3500

(d) 4000

33. Future value of Ordinary Annuity

(a) $A(n, i) = A\left[\frac{(1+i)^n - 1}{i}\right]$

(b) $A(n, i) = A\left[\frac{(1+i)^n + 1}{i}\right]$

(c) $A(n, i) = A\left[\frac{1-(1+i)^n}{i}\right]$

(d) $A(n, i) = A\left[\frac{(1+i)^n - 1}{i(1+i)^n}\right]$

34. Nominal rate of Interest 9.9% p.a. If Interest is compounded monthly. What will be the effective rate of Interest? (Given $\left(\frac{4033}{4000}\right)^{12} = 1.1036$)

(a) 10.36 %

(b) 9.36%

(c) 11.36%

(d) 9.9 %

35. A machine worth of Rs. 4,90,740 is depreciated at 15% on its opening value each year. When its value reduces to Rs. 2,00,000

(a) 4 years 6 months

(b) 4 years 7 months

(c) 4 years 5 months

(d) 5 years 7 months approximately

36. A sinking fund is created redeeming debentures worth Rs. 5,00,000 at the end of 25 years. How much provision need to be made out of profits each year provided sinking fund investments can earn at 4 % per annum

(a) 12,006

(b) 12,040

(c) 12039

(d) 12035

37. Nominal Rate of Return =

(a) Real Rate of Return – Inflation

(b) Real Rate of Return + Inflation

(c) Real Rate of Return / Inflation

(d) Real Rate of Return × Inflation

38. Net Present value≥ 0, then

    (a) Accept the Proposal

    (b) Reject the proposal

    (c) Not Feasible

    (d) None of the above

39. A sum of Money doubles itself at compound interest in 10 years. In how many years will it become eight times

    (a) 10

    (b) 30

    (c) 40

    (d) 35

40. The time in which a sum of money will be doubled at 6% compound interest compounded interest compounded annually approximately.

    (a) 10 years

    (b) 12 years

    (c) 13 years

    (d) 14 years

41. 18, 24, 21, 27, ?, 30, 27

    (a) 33

    (b) 30

    (c) 24

    (d) 21

42. 5, 7, 11, ?, 35, 67

    (a) 23

    (b) 28

    (c) 30

    (d) 19

43. If GARDEN is coded as 325764 and WATER as 92165, how can we code the word WARDEN in the same way?

    (a) 925764

    (b) 295764

    (c) 952764

    (d) 957264

44. If F = 6, MAT=34, then how much is CAR?

(a) 21

(b) 22

(c) 25

(d) 28

45. Find next term of the series, 4, 9, 16, 25, 36, 49, ?

(a) 1

(b) 9

(c) 20

(d) 64

46. Find odd man out of the series 16, 25, 36, 72, 144, 196, 225

(a) 36

(b) 72

(c) 196

(d) 225

47. Raju starts from point A and walks 1 km towards south, turns left and walks 1 km. Then he turns left again and walks 1 km. now he is facing?

(a) East

(b) West

(c) North

(d) South-West

48. Roopa starts from a point and walks 15 metre towards west, turns left and walks 12 metre, turns right again and walks. What is the direction she is now facing?

(a) South

(b) West

(c) East

(d) North

49. A car travelling from south to north covers a distance of 8 kms, then turns right and runs another 9 kms and again turns to the right and was stopped. Which direction does it face now?

(a) South

(b) North

(c) West

(d) East

50. There are five houses P, Q, R, S and T. P is right of Q and T is left of R and right of P. Q is right of S. Which house is in the middle?

(a) P

(b) Q

(c) T

(d) R

51. Six friends A, B, C, D, E and F are sitting in a row facing towards North, C is sitting between A and E, D is not at the end, B is sitting at immediate right of E, F is not at the right end, but D is sitting at 3rd left of E. Which of the following is sitting to the left of D?

(a) A

(b) F

(c) E

(d) C

52. Six girls are standing in such a way that they form a circle, facing the centre. Subbu is to the left of Pappu, Revathi is between Subbu and Nisha, Aruna is between Pappu and Keerthna. Who is to the right of Nisha?

(a) Ravathi

(b) Aruna

(c) Subbu

(d) Keerthana

53. A is B's brother. C is D'S father. E is B's mother. A and D are brothers. How is E related to C?

(a) Sister

(b) Sister-in- law

(c) Niece

(d) Wife

54. A is B's brother, C is A's mother, D is C's father, E is B's son, How is B related to D?

(a) Son

(b) Granddaughter

(c) Grandfather

(d) Great Grandfather

55. A is the mother of D and sister of B. B has a daughter C who is married to F. G is the husband of A. How is G related to D?

    (a) Uncle

    (b) Husband

    (c) Son

    (d) Father

56. P and Q are brothers. R and S are sister. P's son is S's brother. How is Q related to R?

    (a) Uncle

    (b) Brother

    (c) Father

    (d) Grandfather

57. Pointing out to a photograph, a man tells his friend, "She is the daughter of the only son of my father's wife." How is the girl in the photograph related to the man?

    (a) Daughter

    (b) Mother

    (c) Cousin

    (d) Sister

58. A party consists of grandmother, father, mother, four sons and their wives and one son and two daughters to each of the sons. How many females are there is all?

    (a) 13

    (b) 16

    (c) 18

    (d) 24

59. Shyam goes 5 km in the North from his school. Now, turning to the left, he goes to 10 km and again turns to left and goes to 5 km. How far he is from his school and in which direction?

    (a) 10 km, South from school

    (b) 10 km, North from school

    (c) 10 km, West from school

    (d) 10 km, East from school

60. Rasik walked 20 m towards north. Then he turned right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Finally, he turns left and walks 15 m. In which direction and how many metres is he from the starting position?

    (a) 15 m West

    (b) 30 m East

    (c) 30 m West

    (d) 45 m East

61. The _____ is satisfied when $P_{ab} \times P_{bc} \times P_{ca} = 1$

    (a) Time reversal test

    (b) Factor reversal test

    (c) Circular Test

    (d) none of these

62. The index number of prices at a place in 2008 is 355 with 2003 as base. This means -

    (a) There has been on the average a 255% increase in prices.

    (b) There has been on the average a 355% increase in price.

    (c) There has been on the average a 250% increase in price.

    (d) None of these.

63. The number of tests of Adequacy

    (a) 2

    (b) 3

    (c) 4

    (d) 5

64. If two events A and B are independent, the probability that both will occur is given by

    (a) P(A) x P(B)

    (b) P (A) + P (B)

    (c) P(A) + P(B) – P(AUB)

    (d) P(A) + P(B) – P(A∩B)

65. If p: q is the odds in favor of an event, then the probability of that event is -

    (a) p/q

    (b) $\frac{q}{p+q}$

(c) $\frac{p}{p+q}$

(d) none of these

66. If P (A) = 4/9; then the odd against the event ‘A’ is

(a) 4:9

(b) 4:5

(c) 5:4

(d) 4:14

67. If two letters are taken at random from the word HOME, what is the Probability that none of the letters would be vowels?

(a) 1/6

(b) 1/2

(c) 1/3

(d) ¼

68. Equations of two lines of regression are 4x+3y+7 = 0 and 3x+ 4y + 8 = 0, the mean of x and y are

(a) 5/7 and 6/7

(b) – 4/7 and –11/7

(c) 2 and 4

(d) None of these

69. Correlation Co-efficient is _____ of the units of measurements

(a) Independent

(b) Dependent

(c) Both

(d) none of these

70. 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

71. Statistics is concerned with

(a) Qualitative information

(b) Quantitative information

(c) (a) or (b)

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

72. The standard deviation of 25, 32, 43, 53, 62, 59, 48, 31, 24, 33 is

(a) 13.23

(b) 12.33

(c) 11.33

(d) none of these

73. The quartile deviation of a normal distribution with mean 10 and standard deviation 4 is

(a) 0.675.

(b) 67.50.

(c) 2.70

(d) 3.20.

74. If the range of x is 2, what would be the range of – 3x + 50?

(a) 2

(b) 6

(c) -6

(d) 44

75. If the quartile deviation of a normal curve is 4.05, then its mean deviation is

(a) 5.26

(b) 6.24

(c) 4.24

(d) 4.80

76. The mean of first 3 terms is 14 and the mean of next 2 terms is 18. The mean of 5 numbers is -

(a) 14.5

(b) 15

(c) 14

(d) 15.6

77. The Standard deviation is independent of change of

(a) Origin

(b) Scale

(c) Both

(d) none

78. If two variables are uncorrelated then regression lines are

(a) Parallel

(b) Perpendicular

(c) Coincident

(d) Inclined at 45^0

79. When 'p' = 0.5, the

(a) Asymmetrical.

(b) Symmetrical.

(c) Both of above.

(d) None of above

80. In a normal distribution skewness is ___

(a) 0

(b) >3

(c) <3

(d) <1

81. If mean and standard deviation of a binomial distribution is 10 and 2 respectively; q will be ___

(a) 1

(b) 0.8

(c) 0.6

(d) 0.4

82. Which one is not a condition of Poisson model

(a) the probability of having failures in a small time interval is constant

(b) the probability of having success more than one in a small time interval is very small

(c) the probability of having success in this time interval is independent of time 't' as well as earlier success

(d) the probability of having success in a small time interval (t, t+td) is Kt for a positive constant k.

83. In _____ distribution, mean = variance.

(a) Normal

(b) Binomial

(c) Poisson

(d) none of these

84. The points of inflexion of the normal curve $f(t)=\frac{1}{4\sqrt{2\pi}}e^{\frac{-(t-10)^2}{32}}$ are

(a) 6, 14

(b) 5,15

(c) 4,16

(d) none of these

85. The total area of the normal curve is the

(a) one

(b) 50 percent

(c) 0.50

(d) any value between 0 and 1

86. 'Stub' of a table is the _____ part of the table describing the _____.

(a) Left, Columns

(b) Right, Columns

(c) Right, Rows

(d) Left, Rows

87. The pair of averages whose value can be determined graphically.

(a) Mean and Median

(b) Mode and Mean

(c) Mode and Median

(d) None of these

88. Find the Expected value of the following distribution

x	-20	-10	30	75	80
P(x)	3/20	1/5	1/2	1/10	1/20

(a) 20.5

(b) 21.5

(c) 22.5

(d) 24.5

89. The tests of shifting bases are called ___

(a) Unit test

(b) Time reversal test

(c) Circular test

(d) None of these

90. Purchasing power of money is stated as _____ price index?

(a) Equal to

(b) Unequal to

(c) Reciprocal of

(d) None of these

91. If $\sum P_0Q_0$ =1360, $\sum P_nQ_0$= 1900, $\sum P_nQ_0$ = 1344, $\sum P_nQ_0$ = 1880, then the Laspyres Index number is

(a) 71

(b) 139.70

(c) 175

(d) 180

92. The difference between the upper and lower limit of a class is called

(a) Class Interval

(b) Mid Value

(c) Class Boundary

(d) Frequency

93. A man travels from Delhi to Agra at an average speed of 30km per hour and back at an average speed of 60 km per hour. What's the average Speed.

(a) 48 Km/ hr

(b) 40 km/hr

(c) 45 km/hr

(d) 35 km/hr

94. If the mean of frequency distribution is 100 and coefficient of variation is 45% then standard deviation is.

(a) 45

(b) 0.45

(c) 4.5

(d) 450

95. if the mean and SD of X are a and b respectively, then the S.D of $\frac{x-a}{b}$ is

(a) a/b

(b) -1

(c) 1

(d) ab

96. If one regression coefficient is greater than one, then other will be:

(a) More than one

(b) Equal to one

(c) Less than one

(d) Equal to minus one

97. The maximum value of correlation coefficient is

(a) 0

(b) 1

(c) -1

(d) none of these

98. What is exclusive Series

(a) In which both upper and lower limit are not included in class frequency

(b) In which lower limit is not included class frequency

(c) In which upper limit is not included in class frequency

(d) None of the above

99. If the arithmetic mean between two numbers is 64 and the Geometric Mean between them is 16. The Harmonic mean between them is ___

(a) 64

(b) 4

(c) 16

(d) 40

100. When the mean is 3.57 and mode is 2.13, then the value of median is ___

(a) 3.09

(b) 5.01

(c) 5.01

(d) none of these.

Mock Test Paper - Series I: July, 2024

Date of Paper: 2nd August, 2024

Time of Paper: 10.30 A.M. to 12.30 P.M.

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. What is the value of $\frac{p+q}{p-q}$ if $\frac{p}{q}=7$
   (a) 2/3
   (b) 4/3
   (c) 2/6
   (d) 7/8
2. If $2^{x+y} = 2^{x-y} = \sqrt{8}$, then the value of x and y are
   (a) 1, ½
   (b) ½, 1
   (c) ½, ½
   (d) none of these
3. The equation $x^3 - 3x^2 - 4x + 12 = 0$ has three real roots, they are:
   (a) -2, 2, 3
   (b) -2, -2, 3
   (c) 2, -2, -3
   (d) -2, 2, -3
4. If $\alpha \; and \; \beta$ are roots of the equation $x^2 - 8x + 12 = 0$ then 1/ α + 1/ β = ____
   (a) 2/3
   (b) 2/4
   (c) 3/4
   (d) 4/5
5. The roots of the equation $x^2 – 7x + 10 = 0$ are:
   (a) -2 and -5
   (b) 2 and 5
   (c) 2 and -5
   (d) -2and 5

6. Given that $\log_{10}2 = x$ and $\log_{10}3 = y$, the value of $\log_{10}120$ is expressed as

   (a) $2x - y + 1$

   (b) $2x + y + 1$

   (c) $2x - y - 1$

   (d) none of these

7. If four numbers $\frac{1}{2}, \frac{1}{3}, \frac{1}{5}, \frac{1}{x}$ are proportional then x =

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

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

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

   (d) none

8. If $x = 2 + \sqrt{3}$ and $y = 2 - \sqrt{3}$ then value of $x^2 + y^2$ =

   (a) 14

   (b) 4

   (c) 2

   (d) 6

9. If the ratio of the roots of the Equation $4x^2-6x+p=0$ is 1:2 then the value of p is:

   (a) 1

   (b) 2

   (c) -2

   (d) -1

10. The ratio of number of boys and number of girls in a school is found to be 15: 32. How many boys and equal number of girls should be added to bring the ratio to 2/3?

    (a) 19

    (b) 20

    (c) 23

    (d) 27

11. If $2x+5 > 3x+2$ and $2x-3 \leq 4x-5$, then x takes which of the following value ?

    (a) 4

    (b) -4

    (c) 2

    (d) -2

12. Solve for x of the Inequalities $2 \leq \frac{3x-2}{5} \leq 4$ where $x \in N$

    (a) {5,6,7}

    (b) {3,4,5,6}

    (c) {4,5,6}

    (d) {4,5,6,7}

13. The amount charged for a defined length of time for uses of principal, generally on year basis is known as

    (a) Balance

    (b) Rate of Interest

    (c) Principal

    (d) EMI

14. The sum required to earn a monthly interest of ₹ 1200 at 18% p.a. Simple Interest is –

    (a) ₹ 50,000

    (b) ₹ 60,000

    (c) ₹ 80,000

    (d) None of these

15. Sachin deposited ₹ 1,00,000 in his bank for 2 years at simple interest of 6%. How much interest would be he earns? How much final value of deposit

    (a) ₹ 6,000, ₹ 1,06,000

    (b) ₹ 15,000, ₹ 1,15,000

    (c) ₹ 11,600, ₹ 1,11,600

    (d) ₹ 12,000, ₹ 1,12,000

16. The ratio of principal and the compounded interest value for three years (Compounded annually) is 216:127. The rate of interest is:

    (a) 0.1777

    (b) 0.1567

    (c) 0.1666

    (d) 0.1587

17. The Compounded interest ₹8000 for 6 months at 12% p.a payable quarterly is:

    (a) ₹ 487.20

    (b) ₹ 480

    (c) ₹ 380

    (d) None of these

18. The annual birth and death rates per 1,000 are 39.4 and 19.4 respectively. The number of years in which the population will be doubled assuming there is no immigration or emigration is:

    (a) 35 years

    (b) 30 years

    (c) 25 years

    (d) none of these

19. The simple interest on sum of money at 6% p.a. for 7 years is equal to twice of simple interest on another sum for 9 years at 5 p.a. The ratio will be:

    (a) 2:15

    (b) 7:15

    (c) 15. 7

    (d) 1:7

20. Nominal rate of Interest is 9.9 % p.a. If interest is compounded monthly, what will be effective rate of Interest.

    (a) 10.35%

    (b) 9.36%

    (c) 11.36%

    (d) 9.9%

21. The population of a town increases by 2% of the population at the beginning of the year. The number of years by which the total increases in population would be 40% is:

    (a) 7 years

    (b) 10 years

    (c) 17 years

    (d) 19 years

22. A stock pays annually an amount of ₹ 10 from 6^{th} year onwards. What is the present value of perpetuity, if the rate of return is 20%

    (a) 20.1

    (b) 19.1

    (c) 21.1

    (d) 22.1

23. A sum of money invested in compounded interest doubles itself in four years. In how many years it becomes 32 times of itself as the same rate of compound interest?

    (a) 12 years

    (b) 16 years

(c) 20 years

(d) 24 years

24. Sinking fund factor is the reciprocal of ____

(a) Present value of interest factor of a single cash flow

(b) Present value interest factor of annuity

(c) Future value of Interest factor of annuity

(d) Future value of Interest factor of a single cash flow

25. If the nominal rate of growth is 17% and inflation is 9% for the five years. Let P be the Gross domestic Product (GDP) amount at the present year then the projected real GDP after 6 years is:

(a) 1.587 P

(b) 1.921P

(c) 1.403P

(d) 2.51 P

26. If the interest rate on a loan as 1% per month, the effective annual rate of interest is:

(a) 12%

(b) 12.36%

(c) 12.68%

(d) 12.84%

27. A user wants to create a password using 4 lowercase letters (a-z) and 3 uppercase letters (A-Z). No letter can be repented in any form. In how many ways can the password be created if the password must start with an uppercase letter?

(a) $26 \times 25 \times 24 \times 23 \times 22 \times 5 \times 21$

(b) $26 \times 25 \times 24 \times 23 \times 22 \times 2 \times 21$

(c) $26 \times 5 \times 25 \times 24 \times 23 \times 2 \times 22 \times 21$

(d) $6 \times 26 \times 25 \times 24 \times 23 \times 22 \times 21$

28. In how many ways can 5 boys and 3 girls sit in a row so that no two girls are together

(a) 14,400

(b) 14,000

(c) 14,425

(d) 12,400

29. In how many ways the letters of the word "STADIUM" be arranged in such a say that the vowels all occur together?

    (a) 7!/ 3!

    (b) 5! 4!

    (c) 5! 3!

    (d) 7! 3!

30. How many ways can 5 different trophies can be arranged on a shelf if one particular trophy must always be in the middle?

    (a) 24

    (b) 120

    (c) 48

    (d) 144

31. The 3^{rd} term of a G.P is 2/3 and 6^{th} term is 2/81, then the first term is

    (a) 6

    (b) 1/3

    c) 9

    (d) 2

32. If the sum of n terms of an A.P. is $(3n^2 – n)$ and its common difference is 6, then its first term is:

    (a) 3

    (b) 2

    (c) 4

    (d) 1

33. In a survey of 300 companies, the number of companies using different media-Newspapers (N), Radio (R) and Television (T) are as follows:

    $n(N) = 200$, $n(R) = 100$, $n(T) = 40$, $n(N \cap R) = 50$, $n(R \cap T) = 20$, $n(N \cap R) = 25$, and $n(N \cap R \cap T) = 5$,

    Find the numbers of companies using none of these media:

    (a) 20 companies

    (b) 250 companies

    (c) 30 companies

    (d) 50 companies

34. If $f(x) = x+2$, $g(x) = 7^x$, then g of (x) =

    (a) 7x.x+2. 7x

    (b) 7x+2

(c) 49(7x)

(d) None of these

35. The relation R = {(1,1), (2,2), (3,3), (1,2), (2,3), (1,3)} on the set A = {1,2,3} is:

(a) reflexive but not symmetric

(b) reflexive but not transitive

(c) symmetric and transitive

(d) neither symmetric nor transitive

36. If $f(x) = (x + 1)^{x+1}$ then find f'(0)

(a) 0

(b) 1

(c) -1

(d) 2

37. if $f(x) = x(x^2-2)$ then $\frac{dy}{dx}$

(a) $3x^2-2$

(b) $3x^2+2$

(c) x^2-3

(d) x^2

38. The equation of the curve which passes through the point (1,2) and has the slope 3x-4 and the point of (x, y) is

(a) $2y = 3x^2-8x+9$

(b) $y = 6x^2-8x+9$

(c) $y=x^2-8x+9$

(d) $2y= 3x^2-8x+c$

39. The slope of the tangent to the curve $y=x^2-x$ at the point where the line y=2 cuts the curve in the first quadrant is

(a) 2

(b) 3

(c) -3

(d) none of these

40. $\int 2^{3x}.3^{2x}.5^{x}\,dx =$

(a) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(720)}+c$

(b) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)}+c$

(c) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(180)}+c$

(d) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(90)}+c$

41. Find the missing value in the series: 51, 52, 60, 87, 151, _____, 492.

(a) 195

(b) 276

(c) 317

(d) 420

42. Find missing term of the series ABD, DGK, HMS, MTB, SBL, ?

(a) XKW

(b) ZAB

(c) ZKU

(d) ZKW

43. In a certain code TEACHER is written as VGCEJGT, how is CHILDREN written in that code.

(a) EJKNEGTP

(b) EGKNFITP

(c) EJKNFGTO

(d) EJKNFTGP

44. In a certain code INACTIVE is written as VITCANIE, how is COMPUTER written in the same code

(a) PMOCRETU

(b) ETUPMOCR

(c) UTEPMOOR

(d) MOCPETUR

45. Choose the odd numerical pair group

(a) 34-43

(b) 55-62

(c) 62-71

(d) 83-92

46. Gopal started from the house towards West. After walking a distance of 30 metres, he turned towards right and walked 20 metres. He then turned left and moving a distance of 10 metres, turned to his left again and walked 40 metres.

He now turned to the left and walked 5 metres. Finally, he turned to his left. In which direction was he walking now?

(a) North

(b) South

(c) East

(d) South-West

47. Namita walks 40 metres towards west Namita walks 14 metres towards west, then turns to her right and walks 14 metres and then turns to her left and walks 10 metres. Again turning to her left she walks 14 metres. What is the shortest distance (in metres) between her starting point and the present position?

(a) 38

(b) 28

(c) 10

(d) 24

48. The door of Aditya's house faces the East. From the back side of his house, he walks straight 50 m, then turns to the right and walks 50 m again. Finally, he turns towards left and stops after walking 25 m. Now, Aditya is in which direction form the starting point?

(a) South-East

(b) North-East

(c) South-West

(d) North -East

49. Maya starts at point T, walks straight to point U which is 4 ft. away. She turns left, at 90◦ and walks to W which is 4 ft. away. turns 90◦ right and goes 3 ft. to P. turns 90° right and walks 1 ft. to Q, turns left at 90◦ and goes to V, which is 1 ft. away and once again turns 90° right and goes to R. 3 ft. away. What is the distance between T and R?

(a) 4 feet

(b) 5 feet

(c) 7 feet

(d) 8 feet

50. 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 South-east of P and T is to the north of R in line with QP. In which direction of P is T located?

(a) East

(b) South-east

(c) North

(d) North-east

51. All the six members of a family 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 a 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) 1

    (b) 2

    (c) 3

    (d) 4

52. T, S and R are three brothers. T's son Q is married to K and they have one child Rahul blessed to them. M the son of S is married to H and this couple is blessed with a daughter Madhvi. R has daughter N who is married to P. This couple has one daughter Karuna born to them. How is Madhvi related to S?

    (a) Daughter

    (b) Niece

    (c) Granddaughter

    (d) None of these

53. Six persons M, N, O, P, Q and R are sitting in two rows with three persons in each row. Both the row are in front of each other. Q is not at the end of any row. P is second the left of R. O is the neighbour of Q and diagonally opposite to P. N is the neighbour of R. Who is in front N?

    (a) R

    (b) Q

    (c) P

    (d) M

54. The length and breadth of a room are 8 metre and 6 metre respectively. A cat runs along all four walls and finally along diagonal order to catch a rat. How much total distance covered by the cat?

    (a) 10

    (b) 14

    (c) 38

    (d) 48

55. Ravi left home and cycled 10 km towards South, then turned right and cycled 5 km and then again turned right and cycled 10 km. After this he turned left and cycled 10 km. How many kilometers will he have to cycle to reach his home straight?

    (a) 10Km

    (b) 15km

    (c) 12 km

(d) 17 km

56. If A+B means B is the brother of A; A×B means B is the husband of A;

A−B means A is the mother of B and A% B means A is the father of B, which of the following relations shows that Q is the grandmother of T?

(a) Q−P+R % T

(b) P×Q % R−T

(c) P×Q % R+T

(d) P+Q % R−T

57. Read the following instructions:

P $ Q means P is the brother of Q;

P # Q means P is the mother of Q;

P * Q means P is the daughter of Q

If the code of family is A # B $ C * D, who is the father in them?

(a) D

(b) B

(c) C

(d) A

(58-59.) There are seven members A, C, D, E, F, G and H in a family. There are two fathers, one mother two sisters and four brothers. E is the sister-in-law of D. G is a daughter of C. F is the brother of E. A is a grandfather of G. E is a mother of H?

58. How is H related to A?

(a) Grandson

(b) Granddaughter

(c) Son

(d) Cannot be determined

59. How many male members in the family?

(a) 4

(b) 5

(c) 3

(d) Data Inadequate

60. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then how A is related to D.

(a) Grandfather

(b) Grandmother

(c) Daughter

(d) Granddaughter

61. The following set of data cannot be presented in a table

(a) The heights of students described in centimetres

(b) The weights of candidates expressed in kilograms

(c) The amount of rainfall opined as “medium”, “average”, “heavy", etc.

(d) The number of bills per day cleared by an auditor in a month

62. According to the empirical rule, if the data form a "bell-shaped “distribution, then the maximum and minimum frequencies occur at _____ and _____ respectively.

(a) Middle, left end

(b) Middle, right end

(c) End, middle

(d) Middle, ends

63. The Mean of a set of 20 observations on 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is:

(a) 17.6

(b) 18.0

(c) 5.7

(d) 24.6

64. 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

65. Histogram is used for finding

(a) Mode

(b) Mean

(c) First Quartile

(d) None

66. The median following numbers, which are given in ascending order is 25. Find the value of x

11, 13, 15, 19, (x+2), (x+4), 30, 35, 39, 46

(a) 22

(b) 20

(c) 15

(d) 30

67. The mean salary of a group of 50 persons is ₹ 5850. Later on it is discovered that the salary of one has been wrongly taken as ₹8000 instead of RS. 7800. The corrected mean salary is

(a) ₹ 5854

(b) ₹ 5846

(c) ₹ 5640

(d) None

68. If the mode of a data is 18 and mean is 24, then median is

(a) 18

(b) 24

(c) 22

(d) 21

69. If the first Quartile is 142 and semi-inter quartile range is 18, then the value of median is:

(a) 151

(b) 160

(c) 178

(d) none of these

70. Orgin is shifted by 5, what will happen

(a) SD will increase by 5

(b) QD will increase by 5

(c) MD will increase by 5

(d) There will be no change in SD

71. The third decile for the numbers 15, 10, ,25, 18, 111, 9 and 12 is

(a) 13

(b) 10.70

(c) 11

(d) 11.50

72. The Harmonic mean H of two numbers is 4 and their arithmetic means A and the geometric mean G satisfy the equation $2A+G^2 = =27$, the numbers are:

(a) (1,3)

(b) (9,5)

(c) (6,3)

(d) (12,7)

73. If mean and coefficient of variation of the marks of 10 students is 20 and 80 respectively. What will be the variance of them?

(a) 256

(b) 16

(c) 25

(d) none of these

74. If the same amount is added or subtracted from all the of an individual series then the standard deviation and variance both shall be ___

(a) Changed

(b) Unchanged

(c) Same

(d) none of these

75. The algebraic sum of the deviations of set of values from their arithmetic mean is:

(a) >0

(b) <0

(c) 0

(d) None of these

76. The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is

(a) 11

(b) 6

(c) 5

(d) 9

77. Which of the following is not a type of sampling?

(a) Probability

(b) Non- Probability

(c) Stand-alone

(d) Mixed

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

Find P(A'/B)

(a) 13/18

(b) ½

(c) 13/20

(d) 5/18

79. If a card is drawn at random from a pack of 52 cards, what is the chance of getting spade or an ace?

(a) 4/13

(b) 5/13

(c) 0.25

(d) 0.20

80. The chance of getting a sum of 10 in a simple single throw is

(a) 10/36

(b) 1/12

(c) 1/36

(d) none of these

81. A random variable has the following probability distribution:

X	2	3	5
P	K	2K	2K

Find K

(a) 1/3

(b) 2/5

(c) 1/5

(d) 2/3

82. A number is selected at random from the set {1, 2,…..,99}. The probability that it is divisible by 9 or 11 is _____

(a) 19/100

(b) 19/99

(c) 10/100

(d) 10/99

83. A random variable X follows Binomial Distribution With E(X) = 2 and V(x) =1.2, then the value of n is

(a) 8

(b) 2

(c) 5

(d) none of these

84. The mean of Poisson distribution is 4. The probability of two-successes in

(a) $8/e^4$

(b) $4/e^4$

(c) $16/e^4$

(d) $8/e^2$

85. The mean deviation abut median of standard normal variate is

(a) 0.675

(b) 0.675

(c) 0.80

(d) 0.80

86. If the Quartile Deviation of a normal distribution with mean 10 and SD 4 is

(a) 0.675

(b) 67.50

(c) 2.70

(d) 3.20

87. If the two Quartiles $N(\mu,\sigma^2)$ are 14.6 and 25.4 respectively. What is the standard deviation of the distribution?

(a) 9

(b) 6

(c) 10

(d) 8

88. When 'p' is large than 0.5, the Binomial Distribution is:

(a) Asymmetrical

(b) Symmetrical

(c) Both

(d) None

89. A die is thrown 100 times if getting an even number is considered a success then the variance number of success.

(a) 50

(b) 25

(c) 10

(d) 100

90. Two regression lines are perpendicular each other of r =

(a) 0

(b) +1

(c) -1

(d) none of these

91. if r = 0.6, then the coefficient of non -determination is:
    (a) 0.4
    (b) -0.6
    (c) 0.36
    (d) 0.64
92. The sum of the squares of differences in ranks of marks obtained in Physics and Chemistry by 10 students in a test is 150, then the coefficient of rank correlation by:
    (a) 0.849
    (b) 0.091
    (c) 0.909
    (d) None of these
93. If one regression coefficient is ____ unity, the other must be ____Unity
    (a) more than, more than
    (b) less than, less than
    (c) more than, less than
    (d) Positive, Negative
94. For lines of regression 4x-2y=3 and 2x-3y=5, find bxy
    (a) 1/8
    (b) 1/2
    (c) 1/12
    (d) none of these
95. if the coefficient of correlation between x and y is 0.5, the covariance is 16 and if the standard deviation of x is 4 then Standard deviation of y is:
    (a) 4
    (b) 8
    (c) 16
    (d) 64
96. Fisher index number is _____of Laspyres and Paasches Index Number
    (a) A.M
    (b) G.M
    (c) H.M
    (d) None of these
97. Circular test is satisfied by which of the following index?
    (a) Laspeyres index

(b) Paasche’s index

(c) Fisher’s index

(d) Simple geometric mean of price relatives

98. $\sum P_0Q_0=1360$, $\sum P_nQ_0 = 2000$, then the Laspyres Index number is:

(a) 71

(b) 147.50

(c) 175

(d) none of these

99. If Laspyres Index number is 250 and Paasches Index number is 160, then Fishers Index number is:

(a) 200

(b) 400

(c) 250

(d) 196

100. If the prices of all commodities in the base year are twice the values of the respective commodities in the current year, then the Fisher's ideal index number is equal to:

(a) 200

(b) 50

(c) 400

(d) 25

Mock Test Paper - Series I: December 2024

Date of Paper: 23rd December 2024

Time of Paper: 10.30 P.M. to 12.30 P.M.

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. $\log_4(x^2 + x) - \log_4(x + 1) = 2$. find x.
   (a) 16
   (b) 0
   (c) -1
   (d) None of these
2. If $x = \log_{24}12$; $y = \log_{36} 24$; $z = \log_{48} 36$ then xyz + 1 = ?
   (a) 2xy
   (b) 2zx
   (c) 2yz
   (d) 2
3. In a two digits number; the digit in the ten's place is twice the digit in the unit's place. If 18 be subtracted from the number the digits are reversed. Find the number.
   (a) 63
   (b) 21
   (c) 42
   (d) None of these
4. For a certain commodity the demand equation giving "y" units for a price "p" in rupees per unit is y = 100 (10 – p). The supply equation giving the supply z units for a price "p" in rupees per unit is z = 75(p-3). The market price is such at which demand equals supply. Find the market price and quantity that will be brought and sold.
   (a) ₹ 7; 300 units
   (b) ₹ 8; 400 units
   (c) ₹ 5; 200 units
   (d) None

5. The age of a person is 8 years more than thrice the age of the sum of his two grandsons who were twins. After 8 years his age will be 10 years more than twice the sum of the ages of his grandsons. Then the age of the person when the twins were born is:

   (a) 86 years

   (b) 73 years

   (c) 68 years

   (d) 63 years

6. Roots of the equation $3x^2 – 14x – k = 0$ will be reciprocal of each other if:

   (a) k= -3

   (b) k = 0

   (c) k = 3

   (d) k = 14

7. It roots of equation $x^2 + x + r = 0$ are ‘α’ and ‘β’ and $\alpha^3 + \beta^3 = -6$. Find the value of ‘r’?

   (a) -5/3

   (b) 7/3

   (c) -4/3

   (d) 1

8. Find the value of: $[1 – \{1 – (1 – x^2)^{-1}\}^{-1}]^{-1/2}$ is

   (a) 1/x

   (b) x

   (c) 1

   (d) none of these

9. The value of $(3^{n+1}+3^n)/ (3^{n+3}- 3^{n+1})$ is equal to:

   (a) 1/5

   (b) 1/6

   (c) 1/4

   (d) 1/9

10. If $u^{5x} = v^{5y} = w^{5z}$ and $u^2 = vw$ then xy + zx – 2yz

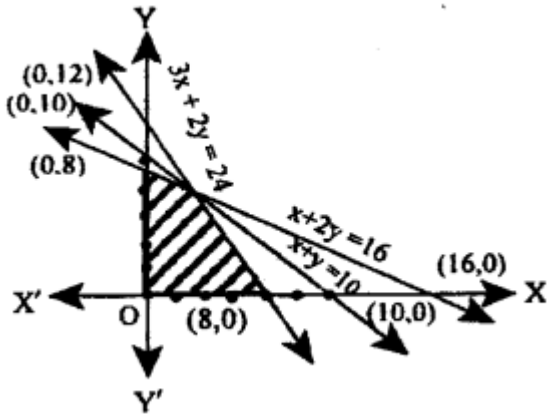
    (a) 0

    (b) 1

    (c) 2

    (d) None of these

11. The shaded region represents



(a) $3x + 2y \leq 24, x + 2y \geq 16, x + y \leq 10x, x \geq 0, y \geq 0$

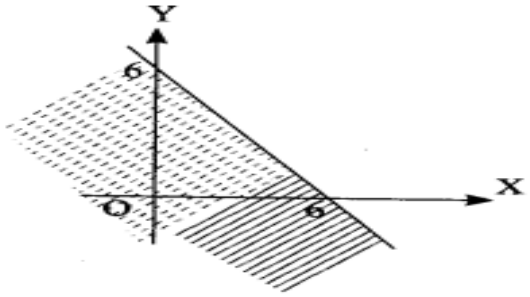
(b) $3x+2y \leq 24, x + 2y \leq 16, x + y \geq 10, x \geq 0, y \geq 0$

(c) $3x + 2y \leq 24, x + 2y \leq 16, x + y \leq 10, x \geq 0, y \geq 0$

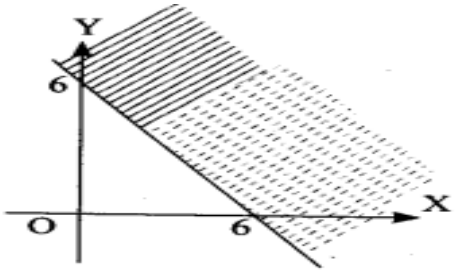
(d) None of these.

12. Which of the following graph represents the in equality $x + y \leq 6$ is

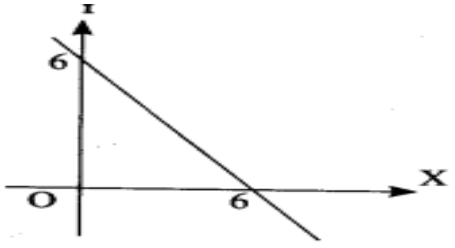
(a)



(b)



(c)



(d) None of these

13. The time by which a sum of money is 8 times of itself if it double itself in 15 years.

(a) 42 years

(b) 43 years

(c) 45 years

(d) 46 years

14. What is the rate of simple interest if a sum of money amount ₹ 2,784 in 4 years and ₹ 2,688 in 3 years ?

(a) 1%p.a.

(b) 4%p.a.

(c) 5%p.a.

(d) 8%p.a.

15. In how many years, a sum will become double at 5% p.a. compound interest.

(a) 14.0 years

(b) 14.1 years

(c) 14.2 years

(d) 14.3 years

16. Mr. X bought an electronic item for ₹ 1000. What would be the future value of the same item after two years, if the value is compounded semi-annually at the rate of 22% per annum ?

(a) ₹ 1488.40

(b) ₹ 1518.07

(c) ₹ 2008.07

(d) ₹ 2200.00

17. The difference between simple and compound interest on a sum of ₹ 10000 for 4 years at the rate of interest 10% per annum is

(a) 650

(b) 640

(c) 641

(d) 600

18. How much will ₹ 25,000 amount to in 2 years at compound interest if the rates for the successive years are 4% and 5% per year:

(a) ₹ 27,000

(b) ₹ 27,300

(c) ₹ 27,500

(d) ₹ 27,900

19. The value of furniture depreciates by 10% a year, if the present value of the furniture in an office is ₹ 21870, calculate the value of furniture 3 years ago:

    (a) ₹ 30,000

    (b) ₹ 40,000

    (c) ₹ 35,000

    (d) ₹ 50,000

20. The effective rate of interest does not depend upon

    (a) Amount of Principal

    (b) Amount of Interest

    (c) Number of Conversion Periods

    (d) None of these

21. If p. i^2 = 96, and R = 8% compounded annually then P =

    (a) ₹ 14,000

    (b) ₹ 15,000

    (c) ₹ 16,000

    (d) ₹17,000

22. If a bank pays 6% interest compounded quarterly what equal deposit have to be made at the end of the each quarter for 3 years if you want to have ₹ 1500 at the end of 3 years?

    (a) ₹ 117.86

    (b) ₹ 115.01

    (c) ₹ 150.50

    (d) None of these

23. Find the present value of an annuity which pays 200 at the end of each 3 months for 10 years assuming money to be worth 5% converted quarterly?

    (a) ₹ 3473.86

    (b) ₹ 3108.60

    (c) ₹ 6265.38

    (d) None of these

24. Mr. A borrows 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?

    (a) ₹ 58239.84

    (b) ₹ 58729.84

    (c) ₹ 68729.84

    (d) None of these

25. A company establishes a sinking fund to provide for the payment of ₹ 2,00,000 debt maturing in 20 years. Contributions to the fund are to be made at the end of every year. Find the amount of each annual deposit if interest is 5% per annum:

    (a) ₹ 6,142

    (b) ₹ 6,049

    (c) ₹ 6,052

    (d) ₹ 6,159

26. Suppose your mom decides to gift you ₹ 10,000 every year starting from today for the next sixteen years. You deposit this amount in a bank as and when you receive and get 8.5% per annum interest rate compounded annually. What is the present value of this money: [Given that P (15, 0.085) = 8.304236]

    (a) 83,042

    (b) 90,100

    (c) 93,042

    (d) 10,100

27. The number of triangles that can be formed by choosing the vertices from a set of 12 points, seven of which lie on the same straight line, is:

    (a) 185

    (b) 175

    (c) 115

    (d) 105

28. A boy has 3 library tickets and 8 books of his interest in the library. Of these 8, he does not want to borrow Mathematics part-II unless Mathematics part - 1 is also borrowed? In how many ways can he choose the three books to be borrowed?

    (a) 41

    (b) 51

    (c) 61

    (d) 71

29. 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) 35

    (b) 175

    (c) 210

    (d) 420

30. In how many ways can the letters of the word FAILURE be arranged so that the consonants may occupy only odd positions?

(a) 576

(b) 476

(c) 376

(d) 276

31. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent ?

(a) 164

(b) 174

(c) 144

(d) 154

32. The sum of the series: 0.5 + 0.55 + 0.555 + …….. to n terms is:

(a) $\frac{5n}{9} + \frac{5}{9}[1 - (0.1)^n]$

(b) $\frac{5n}{9} - \frac{5}{81}[1 - (0.1)^n]$

(c) $\frac{5n}{9} + \frac{5}{81}[1 - (0.1)^n]$

(d) $\frac{5n}{9} + \frac{5}{81}[1 + (0.1)^n]$

33. (x + 1), 3x, (4x + 2) are in A.P. Find the value of x.

(a) 2

(b) 3

(c) 4

(d) 5

34. The 4th term of an A.P. is three times the first and the 7th term exceeds twice the third term by 1. Find the first term ‘a’ and common difference ‘d’.

(a) a = 3, d = 2

(b) a = 4, d = 3

(c) a = 5, d = 4

(d) a = 6, d = 5

35. There are 40 students, 30 of them passed in English, 25 of them passed in Maths and 15 of them passed in both. Assuming that every Student has passed atleast in one subject. How many student’s passed in English only but not in Maths.

(a) 15

(b) 20

(c) 10

(d) 25

36. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then (A – C) × B is:

(a) {(2, 2)(2, 4)(4, 2)(4, 4)(5, 2) (5, 4)}

(b) {(1, 2) (1, 4) (3, 2) (3, 4) (5, 2) (5, 4)}

(c) {(2, 2) (4, 2) (4, 4) (4, 5)}

(d) {(2, 2) (2, 4) (4, 2) (4, 4)}

37. If A= {1,2,3} then the relation R = {(1,1), (2,3), (2,2), (3,3), (1,2)} on A is:

(a) Reflexive

(b) Symmetric

(c) Transitive

(d) Equivalence

38. The cost function for the production of x units of a commodity is given by C(x) = $2x^3 – 15x^2 + 36x + 15$, The cost will we minimum when 'x' equal to:

(a) 3

(b) 2

(c) 1

(d) 4

39. A seller makes an offer of selling certain articles that can be described by the equation x = 25 – 2y where x is price per unit and y denotes the No. of units. The cost price of the article is ₹ 10 per unit. The maximum quantity that can be offered in single deal to avoid loss is:

(a) 6

(b) 7

(c) 8

(d) 9

40. $\int x\, e^x dx$ is:

(a) $(x-1)e^x+C$

(b) $x.e^x+C$

(c) $\log x + x.e^x+C$

(d) None of these

41. Find odd man out of the following:

(a) 295

(b) 381

(c) 552

(d) 729

42. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code ?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

43. If HEALTH is written as GSKZDG, then how will NORTH be written in that code?

(a) OPSUI

(b) GSQNM

(c) FRPML

(d) IUSPO

44. If HONEY is coded as JQPGA, which word is code as VCTIGVU ?

(a) CARPETS

(b) TRAPETS

(c) TARGETS

(d) UMBRELU

45. Which of the following is odd one?

(a) CEHL

(b) KMPT

(c) OQTX

(d) NPSV

46. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?

(a) South

(b) South-West

(c) North-East

(d) North-West

47. A man is facing East, then he turns left and goes to 10 metres then turns right and goes 5 metres then goes 5 metres to the South and from there 5 metres to West. In which direction is he from his original place?

(a) East

(b) West

(c) North

(d) South

48. Rahim started from point X and walked straight 5 km. East, then turned left and walked straight 2 km. and again turned left and walked straight 7 km. In which direction is he from the point X ?

(a) North-East

(b) South-West

(c) South-East

(d) North-West

49. Sangeeta leaves from her home. She first walk 30 metres in North-West direction, and then 30m in South West direction, next she walks 30 metres in South-East direction. Finally she turns towards her house. In which direction is she moving?

(a) North-West

(b) North-East

(c) South-East

(d) South-West

50. A person is facing towards North. He moves 70° clock-wise direction. Again he is moving 300° clock-wise direction. Now, in which direction is he presently facing ?

(a) North-West

(b) South-East

(c) North-East

(d) South-West

51. 8 leaders P, Q, R, S, T, U, V and W are sitting on a bench facing towards North.

(i) T is fourth to the left of P

(ii) S is fourth to the right of W

(iii) U and R are not sitting at the ends, but they are neighbours of T and Q respectively.

(iv) P is next to the right of W and but left of Q.

Who are sitting at the extreme ends ?

(a) T&S

(b) P&Q

(c) U&R

(d) None

Directions (52-53): Read the following informations carefully to answer these questions:

(i) Six flats on a floor in two rows facing North and South are allotted to P, Q, R, S, T and U.

(ii) Q gets a North facing flat and is not next to S.

(iii) S and U get diagonally opposite flats.

(iv) R, next to U, gets a South facing flat and T gets a North facing flat.

52. The flats of which of the other pairs than SU, are diagonally opposite to each other ?

(a) QP

(b) PT

(c) QR

(d) TS

53. Which of the following combinations gets South facing flats ?

(a) UPT

(b) URP

(c) QTS

(d) Data inadequate

54. A, B, C, D, E and F are sitting around a round table. A is between E and F, E is opposite to D, and C is not in either of the neighbouring seats of E. Who is opposite to B ?

(a) C

(b) D

(c) F

(d) None of these

55. Five boys A, B, C, D and E are sitting in a row. A is to the right of B and E is to the left of B but to the right of C. A is to the left of D. Who is second from the left end ?

(a) D

(b) A

(c) E

(d) B

56. A prisoner introduced a boy who came to visit him to the jailor as “Brothers and sisters, I have none, he is my father’s son’s son”. Who is the boy ?

(a) Nephew

(b) Son

(c) Cousin

(d) Uncle

57. Pointing to a man in a photograph, a woman said, “the father of his brother is the only son of my grandfather”, how is the woman related to the man in the photograph?

(a) Mother

(b) Aunty

(c) Daughter

(d) Sister

(Directions 58-59) R is the father of P, who is son in law of M and S is the mother of G. S is a sister of K, who is a brother in law of P and H is the daughter of T, Who is a grandmother of G ?

58. How is G is related to P ?

(a) Son

(b) Daughter

(c) Grand daughter

(d) Cannot be determined

59. If M is a Female, then How is H is related to M ?

(a) Son-in-Law

(b) Daughter-in-law

(c) Mother-in-law

(d) Father-in-law

60. There are two couples in a family. K has two children. M is wife of O, who is brother of B. F is daughter of K. U is sister of S, who is son of O. T is son of B, who is a male How is U related to T?

(a) Mother

(b) Brother

(c) Sister

(d) Cousin

61. The graphical representation of a cumulative frequency distribution is called.

(a) Histogram

(b) Ogive

(c) Both

(d) None of these

62. A table has ____ parts:

(a) Four

(b) Two

(c) Five

(d) None

63. Out of 1000 persons, 25 per cent were industrial workers and the rest were agricultural workers. 300 persons enjoyed world cup matches on T.V. 30 per cent of the people who had not watched world cup matches were industrial workers. What is the number of agricultural workers who had enjoyed world cup matches on TV ?

(a) 230

(b) 250

(c) 240

(d) 260

64. The column headings of a table are known as:

(a) Body

(b) Stub

(c) Box-head

(d) Caption

65. Arrange the dimensions of Bar diagram, Cube diagram, Pie diagram in sequence

(a) 1, 2, 3

(b) 2, 1, 3

(c) 2, 3, 2

(d) 3, 2, 1

66. In a class of 11 students, 3 students were failed in a test. 8 students who passed secured 10,11,20,15,12,14,26 and 24 marks respectively. What will be the median marks of the students

(a) 12

(b) 15

(c) 13

(d) 13.5

67. Suppose a population A has 100 observations 101,102,103,200 and another population B has 100 observations 151, 152, 153, ……. 250. If VA and VB represents the variance of the two populations respectively, then V_A / V_B = : _____

(a) 9/4

(b) 1

(c) 4/9

(d) 2/3

68. Out of these, which is not a probability sampling?

(a) cluster sampling

(b) stratified sampling

(c) quota sampling

(d) simple random sampling

69. With the increase in sample size, the error also____

(a) decreases

(b) increases

(c) remains same

(d) all of the above

70. For a moderately skewed distribution, which of the following relationship holds?

(a) Mean – Median = 3 (Median – Mode)

(b) Median -Mode = 3 (Mean -Median)

(c) Mean – Mode 3 (Mean – Median)

(d) Mean – Median 3 (Mean – Mode)

71. If mean and coefficient of variation of the marks of n students is 20 and 80 respectively. What will be variance of them

(a) 256

(b) 16

(c) 25

(d) None of these

72. A company's past 10 years average earnings is ₹ 40 crores. To have the same average earning for 11 years including theses 10 years, how much earning must be made by the company in the eleventh year ?

(a) ₹ 40 crores

(b) ₹$\frac{40\times10}{11}$ crores

(c) More than Rs. 40 crores

(d) None of these

73. Origin is shifted by 5, then

(a) SD will increase by 5

(b) QD will increase by 5

(c) MD will increase by 5

(d) There will be no change in SD

74. Two unbiased dice are thrown. The expected value of sum of numbers on the upper side is

(a) 3.5

(b) 7

(c) 12

(d) 6

75. An example of bi-parametric continuous probability distribution.

(a) Binomial

(b) Poisson

(c) Normal

(d) (a) and (b)

76. If 5 is subtracted from each observation of some certain item then its co-efficient of variation is 10% and if 5 is added to each item then its coefficient of variation is 6%. Find original coefficient of variation.

(a) 8%

(b) 7.5%

(c) 4%

(d) None of these

77. A bag contains 3 white and 5 black balls and second bag contains 4 white and 2 black balls. If one ball is taken from each bag, the probability that both balls are white is _____

(a) 1/3

(b) ¼

(c) ½

(d) None of these

78. If the difference between mean and mode is 63, then the difference between Mean and Median will be _____

(a) 63

(b) 31.5

(c) 21

(d) None of the above

79. A lady travel at a speed of 20km/h and returned at quicker speed. If her average speed of the whole journey is 24km/h, find the speed of return journey (in km/h)

(a) 25

(b) 30

(c) 35

(d) 38

80. Three identical dice are rolled. The probability that the same number will appear on each of them is:

(a) 1/6

(b) 1/12

(c) 1/36

(d) 1

81. The theory of compound probability states that for any two events A and B:

(a) $P(A \cap B) = P(A) \times P(B)$

(b) $P(A \cap B) = P(A) \times P(B/A)$

(c) $P(A \cup B) = P(A) \times P(B/A)$

(d) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

82. In a non-leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is :

(a) 4/7

(b) 2/7

(c) 3/7

(d) 1/7

83. A card is drawn from a well shuffled pack of 52 cards. Let E, “a king or a queen is drawn” & E_2: “a queen or a jack is drawn”, then:

(a) E_1 and E_2 are not independent

(b) E_1 and E_2 are mutually exclusive

(c) E_1 and E_2 are independent

(d) None of these

84. The overall percentage of failure in a certain examination is 0.30. What is the probability that out of a group of 6 candidates at least 4 passed the examination?

(a) 0.74

(b) 0.71

(c) 0.59

(d) 0.67

85. A manufacturer, who produces medicine bottles, finds that 0.1 % of the bottles are defective. The bottles are packed in boxes containing 500 bottles. A drug manufacturer buys 100 boxes from the producer of bottles. Using Poisson

distribution, find how many boxes will contains at least two defectives: [Given: $e^{-05} = 0.6065$]

(a) 7

(b) 13

(c) 9

(d) 11

86. The probability than a man aged 45 years will die within a year is 0.012. What is the probability that of 10 men, at Least 9 will reach their 46^{th} birthday? [Given: $e^{-0.12} = 0.88692$]

(a) 0.0935

(b) 0.9934

(c) 0.9335

(d) 0.9555

87. Shape of Normal Distribution Curve:

(a) Depends on its parameters

(b) Does not depend on its parameters

(c) Either (a) or (b)

(d) Neither (a) nor (b)

88. The mean of Binomial distribution is 20 and Standard deviation is 4 then;

(a) n = 100, p = 1/5, q = 4/5

(b) n = 50, p = 2/5, q = 2/5

(c) n = 100, p = 2/5, q = 4/5

(d) n = 100, p = 1/5, q = 3/5

89. In a Poisson distribution if P(x = 4) = P(x = 5) then the parameter of Poisson distribution is :

(a) 45

(b) 54

(c) 4

(d) 5

90. If the rank correlation co-efficient between marks in Management and Mathematics for a group of students is 0.6 and the sum of the squares of the difference in rank is 66. Then what is the number of students in the group ?

(a) 9

(b) 10

(c) 11

(d) 12

91. Correlation coefficient between X and Y will be negative when

(a) X and Y are decreasing

(b) X is increasing, Y is decreasing

(c) X and Y are increasing

(d) None of these

92. Two variables X and Y are related as $4x + 3y = 7$ then correlation between x and y is _____

(a) Perfect positive

(b) Perfect negative

(c) Zero

(d) None of these

93. Given the regression equations as $3x + y = 13$ and $2x + 5y = 20$. Find regression equation of y on x.

(a) $3x + y = 13$

(b) $2x + Y = 20$

(c) $3x + 5y = 13$

(d) $2x + 5y = 20$

94. 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

95. If one of regression coefficient is ____ unity, the other must be ____ unity.

(a) more than, more than

(b) Less than, Less than

(c) more than, less than

(d) Positive, Negative

96. Circular test is satisfied by which index number?

(a) Laspeyre's

(b) Paasche's

(c) Fisher's

(d) Simple Geometric mean of price Relatives and the aggregative with Fixed weights.

97. Which of the following statement is true ?

(a) Paasche's index number is based on base year quantity

(b) Fisher's index satisfies the circular test

(c) Arithmetic mean is the most appropriate average for constructing the index number

(d) Splicing means constructing one continuous series from two different indices on the basis of common base.

98. Monthly salary of an employee was ₹ 10,000 in the year 2000 and it was increased to ₹ 20,000 in the year 2013 while the consumer price index number is 240 in year 2013 with the base year 2000, what should be his salary in comparison of consumer price index in the year 2013 ?

(a) 2,000

(b) 16,000

(c) 24,000

(d) None of these

99. Purchasing power of money is _____

(a) Reciprocal of price index number

(b) Equal to price index number

(c) Unequal to price index number

(d) None of these

100. In the year 2010 the monthly salary was ₹ 24,000. The consumer price index number was 140 in the year 2010 which rises to 224 in the year 2016. If he has to be rightly compensated what additional monthly salary to be paid to him

(a) ₹ 14,400

(b) ₹ 38,400

(c) ₹ 7,200

(d) None of these

Mock Test Paper - Series II: January,2025

Date of Paper: 2nd January, 2025

Time of Paper: 10.30 A.M. to 1.30 P.M.

FOUNDATION COURSE

PAPER – 2: BUSINESS LAWS

*Question No. **1** is compulsory.*

*Answer any **four** questions from the remaining **five** questions.*

Wherever necessary, suitable assumptions should be made and disclosed by way of note forming part of the answer.

Working Notes should form part of the answer.

(Time allowed: 3 Hours) **(100 Marks)**

1. (a) (i) Mr. A was running an orphanage. His friend Mr. S, a philanthropist agreed to donate ₹ 2 lakh for treatment of a child, who was suffering from cancer. On emergency, Mr. A incurred ₹ 1.5 lakh on treatment of child. Now, Mr. S refused to pay. Whether Mr. A can claim ₹ 1.5 lakh from Mr. S with reference to provisions of the Indian Contract Act, 1872? **(3 Marks)**

(ii) Mr. L let out his residential house to Mr. M for ₹ 50,000 p.m. for a period of one year. According to the Rent agreement, electricity bill will be paid by Mr. L. But Mr. L could not pay electricity dues up to 5 months, due to his financial hardships. The Electricity Board sent the notice of disconnection, if it is not paid within a week's time. To avoid all this, Mr. M paid the electricity bill of ₹ 50,000 with penalty. Later on, L refused to reimburse ₹ 50,000 and argued that he has paid bill voluntarily because of his own interest. Decide with reference to provisions of the Indian Contract Act, 1872 whether Mr. M is entitled to be reimbursed by Mr. L? **(4 Marks)**

(b) (i) XYZ Ltd. was incorporated to hold the patent for a new product. The company is expecting to start its commercial production within the next two years. In the meanwhile, for timely installation, the company has placed the purchase order for plant and machinery with a down payment of ₹ 1 crore. Referring to the provisions of the Companies Act, 2013 examine, whether the company can go for acquiring the status of a dormant company? **(4 Marks)**

(ii) Mike LLC incorporated in Singapore having an office in Pune, India. Analyze whether Mike LLC would be called a foreign company as per the provisions of the Companies Act, 2013? Also explain the meaning of foreign company. **(3 Marks)**

(c) State the modes by which a partner may transfer his interest in the firm in favour of another person under the Indian Partnership Act, 1932. What are the rights of such a transferee? **(6 Marks)**

2. (a) Sony, a friend of Priya wanted to buy her two-wheeler. Priya agreed to sell her two-wheeler to Sony and it was decided that price of her two-wheeler will be fixed by Priya's father, who is an auto dealer. Priya immediately handed over the keys to Sony. However, Priya's father refused to fix the price as he did not want Priya to sell her vehicle. Priya expressed her inability to sell the two-wheeler to Sony and asked for return, but Sony refused to return the same. Explain-

(i) Can Priya take-back the vehicle from Sony?

(ii) Will your answer be different, if Priya had not handed over the vehicle to Sony? **(7 Marks)**

(b) Define OPC (One Person Company) and state the rules regarding its membership. Can it be converted into a non-profit company under Section 8 or a private company? **(7 Marks)**

(c) A LLP is a new form of legal business entity with limited liability. It's an alternative corporate business vehicle that only gives the benefits of limited liability at low compliance cost but allows its partners the flexibility of organizing their internal structure as a traditional partnership. Keeping in view of above, define the following characteristics of LLP.

(i) Body Corporate

(ii) Mutual Agency

(iii) Foreign LLPs

(iv) Artificial legal person **(6 Marks)**

3. (a) (i) P, Q and R formed a partnership agreement to operate motor buses along specific routes for a duration of 12 years. After operating the business for four years, it was observed that the business incurred losses each year. Despite this, P is determined to continue the business for the remaining Period. Examine with reference to the Indian Partnership Act, 1932, can P insist to continue the business? If so, what options are available to Q and R who are reluctant to continue operating the business? **(4 Marks)**

(ii) A and B operate a textile merchant business in partnership. Mr. A finances the business and is a sleeping partner. In the regular course of business, B acquires certain fabric goods belonging to C. However, B is aware that these goods are stolen property. Despite this knowledge, B proceeds to purchase and sell some of these stolen goods. Moreover, B records proceeds from these sales in the firm’s books. Now, A wants to avoid the liability towards C, on the grounds of misconduct by B. In the light of the provisions of the Indian Partnership Act, 1932 discuss the liability of A and B towards C. **(3 Marks)**

(b) (i) XYZ is a company incorporated under the Companies Act, 2013.

The paid up share capital of the company is held by others as on 31.03.2024 in as under:

(1) Government of India 20%

(2) Life Insurance Corporation of India (Public Institution) 8%

(3) Government of Tamil Nadu 10%

(4) Government of Rajasthan 10%

(5) ABC Limited (owned by Government Company) 15%

As per above shareholding, state whether XYZ limited be called a Government Company under the provisions of the Companies Act, 2013. **(4 Marks)**

(ii) M and N holding 70% and 30% of the shares in the company. Both died in an accident. Answer with reference to the provisions of the Companies Act, 2013, what will be the legal effect on the company as both the members have died? **(3 Marks)**

(c) Explain in brief with reference to the provisions of the Indian Contract Act, 1872, what are the rights enjoyed by Surety against the Creditor, the Principal Debtor and Co-Sureties? **(6 Marks)**

4. (a) (i) Mr. J entered into an agreement with Mr. S to purchase his house for ₹ 20 lakh, within three months. He also paid ₹ 50,000/- as token money. In the meanwhile, in an anti-encroachment drive of the local administration, Mr. S's house was demolished. When Mr. J was informed about the incident he asked for the refund of token money.

Referring to the relevant provisions of the Indian Contract Act, 1872 state whether Mr. J is entitled to the refund of the amount paid.

(4 Marks)

(ii) Rama directs Shyam to sell laptops for him and agrees to give Shyam eleven percent (11%) commission on the sale price fixed by Rama for each laptop. As Government of India put restrictions on import of Laptops, Rama thought that the prices of laptops might go up in near future and he revokes Shyam's authority for any further sale. Shyam, before receiving the letter at his end sold 5 laptops at the price fixed by Rama. Shyam asked for 11% commission on the sale of 5 Laptops for ₹ 1 lakh each. Explain under the provisions of the Indian Contract Act, 1872:

(1) Whether sale of laptops after revoking Shyam's authority is binding on Rama?

(2) Whether Shyam will be able to recover his commission from Rama, if yes, what will be the amount of such commission?

(3 Marks)

(b) What are Inchoate and Ambiguous Instruments under the Negotiable Instruments Act, 1881? **(7 Marks)**

(c) Describe in brief about the following Regulatory bodies of the Government of India:

(i) Securities and Exchange Board of India

(ii) Reserve Bank of India

(iii) Insolvency and Bankruptcy Board of India **(6 Marks)**

5. (a) (i) Ram sells 200 bales of cloth to Shyam and sends 100 bales by lorry and 100 bales by Railway. Shyam receives delivery of 100 bales sent by lorry, but before he receives the delivery of the bales sent by railway, he becomes bankrupt. Ram being still unpaid, stops the goods in transit. The official receiver, on Shyam's insolvency claims the goods. Decide the case with reference to the provisions of the Sale of Goods Act, 1930. **(4 Marks)**

(ii) Classify the following transactions according to the types of goods they are:

(A) A wholesaler of cotton has 100 bales in his godown. He agrees to sell 50 bales and these bales were selected and set aside.

(B) A agrees to sell to B one packet of sugar out of the lot of one hundred packets lying in his shop.

(C) T agrees to sell to S all the apples which will be produced in his garden this year. **(3 Marks)**

(b) State the circumstances, in which a Court may, at the suit of the partner, dissolve a partnership firm under the provisions of the Indian Partnership Act, 1932. **(7 Marks)**

(c) In accordance with the provisions of the Indian Contract Act, 1872, answer the following:

(i) Rights of Bailor against any wrong doer (Third Party)

(ii) Duties of the Pawnee **(6 Marks)**

6. (a) Referring to the provisions of the Negotiable Instruments Act, 1881, answer the following in the given scenario:

(i) Aman drew the bill of exchange (the bill) on Baban, who accepted it, payable to Magan or order. Magan indorsed the bill to Gagan. Gagan indorsed the bill to Akash to be delivered to him on the next day. However, on the death of Gagan on the same day, his only son Ankit delivered the bill to Akash on the next day as intended by his deceased father. On presenting the bill on the due date, Baban refused to pay. Explaining the importance of delivery in negotiation, decide, whether Akash can enforce the payment of the bill against Baban or the previous parties. **(4 Marks)**

(ii) Reliable Limited, an Indian company, is a global leader in Petrochemical products. For payment of the sale price of machinery imported from Alex Manufacturing Limited, a USA based company (the exporter), the Indian company drew a bill of exchange on Manish, a resident of Mumbai (India) who accepted the bill at Mumbai payable to the exporter in Los Angeles, USA. Decide,

whether the bill of exchange is an inland instrument or a foreign instrument. Assume that the bill of exchange was signed by the authorised person for the drawer company. **(3 Marks)**

(b) Answer the following as per the provisions of the Indian Contract Act, 1872:

(i) 'Agent cannot personally enforce, nor be personally bound by, contracts on behalf of the principal' however there are some exceptions to this general rule, explain. **(4 Marks)**

(ii) State the rights of Indemnity-holder when sued. **(2 Marks)**

OR

(b) What is the meaning of contingent contract? Write briefly its essentials. Also, explain any three rules relating to enforcement of a contingent contract. **(6 Marks)**

(c) J, a wholesaler of premium Basmati rice delivered on approval 100 bags of rice of 10 kg each to a local retailer, on sale or returnable basis within a month of delivery. The next day the retailer sold 5 bags of rice to a regular customer K. A week later K informed the retailer that the quality of rice was not as per the price.

The retailer now wants to return all the rice bags to J, including the 4 bags not used by K. Can the retailer do so?

Also briefly describe the provisions underlying in this context of the Sale of Goods Act, 1930, **(7 Marks)**

Mock Test Paper - Series I: April, 2025

Date of Paper: 23rd April, 2025

Time of Paper: 2 P.M. to 5 P.M.

FOUNDATION COURSE

PAPER 2: BUSINESS LAWS

*Question No. **1** is compulsory.*

*Attempt any **four** questions from the remaining **five** questions.*

(Time allowed: 3 Hours) **(100 Marks)**

1. (a) (i) Kashish was running a business of artificial jewellery since long. He sold his business to Naman. Naman made an agreement with Kashish not to carry on the business of artificial jewellery and real diamond jewellery in that area and for a period of next one year. After two months, Kashish opened a show room for real diamond jewellery. Naman filed suit against Kashish for closing the business of real diamond business as it was against the agreement. Whether Kashish is liable to close his business of real diamond jewellery following the provisions of the Indian Contract Act, 1872? **(4 Marks)**

(ii) Albert obtained 2 loans of ₹ 3,00,000 and ₹ 4,00,000 respectively from a reputed Bank. Out of these 2 loans, loan of ₹ 3,00,000 was guaranteed by Robert. Albert sent ₹ 2,00,000 to bank but did not intimate as to how it is to be appropriated towards the loans. The Bank appropriated the whole of ₹ 2,00,000 to the loan of ₹ 4,00,000 (the loan not guaranteed). Robert objected on the decision of the Bank. He argued with bank that repayment amount should be first adjusted to the guaranteed loan. State with reasons, whether the Bank was correct in its decision under the Indian Contract Act, 1872? **(3 Marks)**

(b) Parasnath Infraheight Limited is a public company and having 215 members of which 20 members were employees in the company during the period 1st June, 2022 to 30th June, 2024. They were allotted shares in Parasnath Infraheight Limited on 1st April, 2018 which are held by them till today i.e. 31st August 2024. Now, the company wants to convert itself into a private company. State with reasons, whether Parasnath Infraheight Limited is required to reduce the number of members under the provisions of the Companies Act, 2013? **(7 Marks)**

(c) “Indian Partnership Act does not make the registration of firms compulsory, nor does it impose any penalty for non-registration.” In light of the given statement, discuss the consequences of non-registration of the partnership firms in India?

(6 Marks)

2. (a) Priyansh ordered 600 tins of apple juice from an American Company Amjuice Ltd. The company informed that tins would be packed in the boxes each containing 50 tins. On delivery, it was found that a substantial part was in boxes containing only 30 tins. Priyansh rejected the whole order as the tins were not packed according to the description given in the contract as the packing of tins was an essential part of the contract. Amjuice Ltd. sued Priyansh for the recovery of price. State with reason whether Priyansh can avoid the contract under the Sale of Goods Act, 1930? **(7 Marks)**

(b) "What documents and information are required to be filed with the Registrar for the registration of a company under the Companies Act, 2013? **(7 Marks)**

(c) **"**Both Limited Liability Partnerships and Limited Liability Companies offer limited liability protection, yet they differ significantly in structure and governance. Discuss these differences in detail." **(6 Marks)**

3. (a) Rahul and Kapil are partners in the firm M/s Saxena Marble House. Rahul purchased 100 shares of a reputed company in his name, but he made the payment from firm’s account. Rahul did not consent to Kapil before acquiring of shares. Referring to the provisions of the Indian Partnership Act 1932:

(a) Whether the shares purchased by Rahul constitute the property of firm?

(b) What would be your answer if Rahul debits himself in the accounts books of firm and became a debtor to the firm? **(7 Marks)**

(b) (i) Sooraj Pharma Ltd., a public company, its Articles of Association empowers the managing agents to borrow both short and long term loans on behalf of the company, Mr. Smith, the director of the company, approached Easy Finance Ltd., a non banking finance company for a loan of ₹ 25,00,000 in name of the company.

The Lender agreed and provided the above said loan. Later on, Sooraj Pharma Ltd. refused to repay the money borrowed on the pretext that no resolution authorizing such loan have been actually passed by the company and the lender should have enquired about the same prior providing such loan hence company not liable to pay such loan.

Analyse the above situation in terms of the provisions of Doctrine of Indoor Management under the Companies Act, 2013 and examine whether the contention of Sooraj Pharma Ltd. is correct or not? **(4 Marks)**

(ii) XYZ Ltd. was incorporated to hold the patent for a new product. The company is expecting to start its commercial production within the next two years. In the meanwhile, for timely installation, the company has placed the purchase order for plant and machinery with a down payment of ₹ 1 crore. Referring to the provisions of the Companies Act, 2013 examine, whether the company can go for acquiring the status of a dormant company?

(3 Marks)

(c) "What is meant by a void contract and a voidable contract? Explain the differences between the two." **(6 Marks)**

4. (a) Nitin appointed Shiv as his agent to transport apples from Shimla to Delhi. Due to heavy rain in near Shimla, Shiv was stranded for more than seven days. Shiv was not in position to contact with Nitin. To save Nitin from loss, Shiv sold all the apples in the nearby market below the market rate where he was stranded. Explain with reference to the Indian Contract Act 1872, can Nitin recover the loss from Shiv as Shiv had acted beyond his authority? **(7 Marks)**

(b) "Explain the concept of 'presentment for payment' under Section 64 of the Negotiable Instruments Act, 1881. What are the consequences of non-presentment?" **(7 Marks)**

(c) What do you understand by Law? Also explain, how is Law enforced in a legal system? **(6 Marks)**

5. (a) Mr. Shankar sold 1000 Kgs wheat to Mr. Ganesh on credit of 3 months. Wheat was to be delivered after 10 days of contract. After 5 days of contract, a friend of Mr. Shankar secretly informed him that Mr. Ganesh may default in payment. On the information of friend, Mr. Shankar applied the lien and withheld the delivery. With referring to the provisions of the Sale of Goods Act, 1930:

(i) State, whether Mr. Shankar was right in his decision?

(ii) What would be your answer if Mr. Ganesh became insolvent within five days of contract? **(7 Marks)**

(b) "Partners in a firm may be classified into various types based on the extent of their liability." Describe the following:

(i) Dormant Partner

(ii) Nominal Partner

(iii) Partner in profits only

(iv) Partner by holding out **(7 Marks)**

(c) "What do you understand by a quasi-contract? Under what circumstances does it arise according to the Indian Contract Act, 1872?" **(6 Marks)**

6. (a) Sachin bought 1000 Kgs sugar from Saurabh for ₹ 40,000 on three months credit. For this purpose, Sachin issued a promissory note to Saurabh on the same date payable after 3 months. On the date of maturity, the promissory note was dishonoured by Sachin. Saurabh filed suit for the recovery of the amount plus fees of advocate paid by him for defending the suit. Referring the provisions of the Negotiable Instruments Act, 1881, what amount could be recovered by Saurabh from Sachin? **(7 Marks)**

(b) "Explain the circumstances under which a surety may be discharged by revocation of the contract of guarantee under the Indian Contract Act, 1872." **(6 Marks)**

(c) "Explain the rules relating to the delivery of goods under the Sale of Goods Act, 1930" with reference to the following:

(i) Effect of part delivery

(ii) Place of delivery

(iii) Delivery of wrong quantity." **(7 Marks)**

Mock Test Paper - Series II: May, 2025

Date of Paper: 6th May, 2025

Time of Paper: 2 P.M. to 5 P.M.

FOUNDATION COURSE

PAPER 2: BUSINESS LAWS

Question No. **1** is compulsory.

Attempt any **four** questions from the remaining **five** questions.

(Time allowed: 3 Hours) **(100 Marks)**

1. (a) P, Q and R jointly promised to pay S a sum of ₹ 60,000. Examine, considering the provisions of the Indian Contract Act, 1872 -

(i) Can S compel any of three parties P, Q and R to pay him ₹ 60,000?

(ii) R is compelled to pay the whole of the amount to S. Can he recover anything from P and Q, when -

(1) Both P and Q were solvents.

(2) P is not in a position to pay anything. **(7 Marks)**

(b) (i) Oakwood Private Limited is the holding company of Silveroak Private Limited. As per the last profit and loss account for the year ending 31st March, 2025 of Silveroak Private Limited, its turnover was ₹ 1.80 crore and paid up share capital was ₹ 80 lakh. The Board of Directors wants to avail the status of a small company. The Company Secretary of the company advised the directors that Silveroak Private Limited cannot be categorized as a small company. In the light of the above facts and in accordance with the provisions of the Companies Act, 2013, you are required to examine whether the contention of Company Secretary is correct, explaining the relevant provisions of the Act. **(4 Marks)**

(ii) In the Blossom Private Limited, there are only 5 members. All of them go in a boat on a pleasure trip into an open sea. The boat capsizes and all of them died being drowned. Explain with reference to the provisions of the Companies Act, 2013:

(A) Is Blossom Private Limited no longer in existence?

(B) Further is it correct to say that a company being an artificial person cannot own property and cannot sue or be sued? **(3 Marks)**

(c) (i) Explain the rules laid down under the Indian Partnership Act, 1932, for the mode of settlement of partnership accounts after the dissolution of a firm. What is the order in which the assets of the firm are applied? **(4 Marks)**

(ii) Discuss the provisions of the Indian Partnership Act, 1932 regarding the payment of firm debts and separate debts of partners. How are the firm's property and the partners' separate property applied in settling such debts? **(2 Marks)**

2. (a) (i) The Institute of Science and Technology, Dehradun (the buyer), placed an order for various chemicals worth ₹ 1,50,000 from a supplier in Delhi (the seller). The buyer made full advance payment, and the seller dispatched the consignment via a courier of his own choice, without reserving any right of disposal over the goods. The consignment was lost in transit, and now the buyer seeks a refund of the purchase price. With reference to the provisions of the Sale of Goods Act, 1930, assess the validity of the buyer's claim for a refund. **(4 Marks)**

(ii) Sidharth visited an authorized car showroom and purchased a car of his choice without conducting a detailed inspection. After making the payment and taking delivery of the car, he discovered a defect in the engine that could not have been detected even with a reasonable inspection. With reference to the provisions of the Sale of Goods Act, 1930, advise, whether Sidharth can invoke the implied condition of merchantability and repudiate the contract due to the defect in the car. **(3 Marks)**

(b) Explain the classification of capital under Company Law as per the Companies Act, 2013. Discuss the different types of capital and the statutory definitions associated with each. **(7 Marks)**

(c) Explain the advantages of the LLP form of business. How does its legal structure make it a flexible and preferable business model for entrepreneurs? Also, discuss the legal capacities an LLP acquires upon registration. **(6 Marks)**

3. (a) P, Q and R, are partners in a construction firm, PQR Associates. P buys cement on behalf of the firm from D. The cement is used in the ordinary course of the firm's business. P uses the cement for his personal purposes. The supplier D, who is unaware of the private use of cement by P, claims the price from the firm. The

firm refuses to pay for the price, on the ground that the cement was never received by it. Referring to the provisions of the Indian Partnership Act, 1932, answer the followings:

(i) Whether the Firm's contention is tenable?

(ii) What would be your answer if a part of the cement so purchased by P was delivered to the firm by him, and the rest of the cement was used by him for his private use, about which neither the firm nor the supplier were aware? **(7 Marks)**

(b) (i) "Unity Foundation" is a newly incorporated company focused on promoting education and healthcare services in rural areas. The company is registered as a section 8 company with a clear plan to reinvest all profits into its activities, and a license has been accorded by the Central Government. For the financial year ending on 31st March, 2025, the company earned a substantial profit and transferred some amount to M/s ABC Associates (a Partnership firm and one of the member of the Unity Foundation). Subsequently, on the complaint of one of the members, the Central Government, after giving an opportunity of being heard, directed the company to be wound up on the ground that a partnership firm cannot be a member of the section 8 company and it cannot transfer any part of profit to the firm. Explain, in the light of the provisions of the Companies Act, 2013, whether the ground taken for winding up is sufficient. **(4 Marks)**

(ii) Pacific Private Limited has 9 directors on its Board of Directors. The company's Articles of Association currently state that the quorum for board meetings shall be 1/3rd of the total strength or 2 directors, whichever is higher. The company now intends to amend this article to specify that the quorum for board meetings shall be 1/3rd of the total strength or 4 directors, whichever is higher. Advise the company on the procedure for including this entrenchment provision in its Articles, in accordance with the provisions of the Companies Act, 2013. Would your advice differ if the company were a public company? **(3 Marks)**

(c) What is an anticipatory breach of contract? Discuss the legal rights and options available to the promisee under the Indian Contract Act, 1872, when anticipatory breach takes place. **(6 Marks)**

4. (a) Examine the validity of the following agreements under the provisions of the Indian Contract Act, 1872 and justify your answer:

(i) Mrs. Deepika pays a sum of ₹ 20,000 to a marriage bureau to provide information about the prospective grooms for her daughter's marriage.

(ii) Bharat agrees with Rahul to sell his white horse. Unknown to both the parties, the horse was dead at the time of agreement.

(iii) Ayush sells the goodwill of his shop to Omkar for ₹ 5,00,000 and promises not to carry on such similar business within the local limits so long as Omkar carries on like business.

(iv) A property worth ₹ 20,00,000 was agreed to be sold for just ₹ 2,50,000 by a person of unsound mind. **(7 Marks)**

(b) What is a Negotiable Instrument? Explain its meaning and essential characteristics. How does the Negotiable Instruments Act, 1881 classify instruments as payable to order or payable to bearer? **(7 Marks)**

(c) (i) Describe the major functions and specialised divisions of the Reserve Bank of India (RBI). How does it contribute to India's economic development?

(ii) Explain the key responsibilities and organizational structure of the Ministry of Corporate Affairs (MCA). Highlight the legislative acts it administers and the role of the ICLS cadre. **(6 Marks)**

5. (a) (i) PQR Limited, a supplier of electronic components, entered into a contract on August 1, 2024, with PQR Enterprises for the sale of 1000 units of microchips. The contract specifically identified the microchips by serial numbers and confirmed that they were in a deliverable state, stored in PQR Limited's warehouse. The contract stipulated that the goods would be delivered on September 1, 2024.

On August 10, 2024, a flood occurred, damaged the warehouse and destroyed the entire stock of microchips, including the 1000 units intended for PQR Enterprises. Examine, with reference to the provisions of the Sale of Goods Act, 1930 who shall suffer the loss? What will be your answer if the microchips are not specifically identified and marked for PQR Enterprises at the time of the contract? **(4 Marks)**

(ii) A purchases a motorcycle from B and uses it for some time. It turns out that the motorcycle sold by B to A was a stolen one and had to be returned to a rightful owner. A brings action against B for the return of the price. Will

he succeed? Examine this with reference to the provisions of the Sale of Goods Act, 1930. **(3 Marks)**

(b) What is a Partnership Deed? Explain its significance and list the key contents typically included in a partnership deed. Why is it advisable to have the deed in writing, even though it is not mandatory? **(7 Marks)**

(c) Enumerate and explain the duties and obligations of an agent towards the principal under the Indian Contract Act, 1872. **(6 Marks)**

6. (a) (i) Kanika purchased various cosmetic products worth ₹ 15,000 during the last week from Kartik, a shopkeeper, on credit of one month. After a fortnight, she makes out a blank promissory note, signed it and delivered to Kartik who further endorsed it to Manish for the payment of his dues. Manish, who is holder in due course, filled up the due amount of ₹ 17,000 from Kartik and on maturity presented it to Kanika for payment but she refused to pay because the amount filled up is more than the agreed amount of ₹ 15,000. It is to be noted that the amount of ₹ 17,000 is covered by the stamp affixed on it. Referring to the provisions of the Negotiable Instruments Act, 1881 decide, whether Kanika is liable to honour the promissory note to Manish for ₹ 17,000? **(4 Marks)**

(ii) Nisha, a small business owner, receives a bill of exchange from her customer, Neeraj, which is due for payment on October 15th. On October 12th, Nisha presents the bill of exchange for payment at Neeraj's office during regular business hours, but Neeraj is not present. Nisha leaves the bill with Neeraj's assistant, requesting to be presented to Neeraj for payment when he returns. However, Neeraj's assistant forgot to give the bill, and Neeraj does not make the payment by the due date, and the bill is dishonoured. Based on the provisions of the Negotiable Instruments Act, 1881, examine whether Nisha's presentation of the bill of exchange to Neeraj's assistant. **(3 Marks)**

(b) Explain the circumstances under which a contract of bailment may be terminated under the Indian Contract Act, 1872. **(6 Marks)**

(c) Explain the concept of the "Right of Re-sale" under the Sale of Goods Act, 1930. Under what circumstances can an unpaid seller exercise this right? **(7 Marks)**

Mock Test Paper - Series I: August, 2025

Date of Paper: 13th August, 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 triplicate ratio of 8/3 and 16/5 is
   (a) 625:216
   (b) 26:36
   (c) 225:36
   (d) 125:216
2. if 2/5A = 3/7 B, then B:A is
   (a) 15:14
   (b) 14:15
   (c) 10:21
   (d) 6:35
3. If (3x + 2y)/(4x - 3y) = 3/2, then find x:y
   (a) 13:6
   (b) 13:18
   (c) 15:2
   (d) 18:6
4. The roots of the quadratic equation $9x^2 + 3kx + k = 0$ are coincident, if
   (a) k = ± 2
   (b) k =± 3
   (c) k =± 4
   (d) k =± 5

5. if (x-1) is a factor of the cubic equation $x^3 - 9x^2 + 23x - 15 = 0$, then roots of the cubic equation are

   (a) 1,3 and 5

   (b) -1 and 3 and 5

   (c) 1,-3 and 5

   (d) 1,3 and -5

6. $\log\frac{p^2}{qr} + \log\frac{q^2}{pr} + \log\frac{r^2}{pq} =$

   (a) pqr

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

   (c) 1

   (d) 0

7. $\log_a\sqrt{3} = \frac{1}{6}$, find the value of a

   (a) 9

   (b) 81

   (c) 27

   (d) 3

8. If $2^x \times 3^y \times 5^z = 720$ then the value of x, y, z ?

   (a) 4, 2, 1

   (b) 1, 2, 4

   (c) 2, 4, 1

   (d) 1, 4, 2

9. A man wants to cut three lengths from a single piece of boaard of length 91 cm . The Second length is to be 3 cm longer than the shortest and third length is to be twice as the shortest. What is the possible length for the shortest piece ?

   (a) 22

   (b) 20

(c) 15

(d) 18

10. The sum of three numbers is 98. If the ratio of the first to second number is 2 : 3 and that of the second to third is 5: 8, then the second number is

(a) 20

(b) 30

(c) 48

(d) 58

11. On solving the inequalities $6x + y \geq 18$, $x + 4y \geq 12$, $2x + y \geq 10$; which of the following are correct solutions?

(a) (0, 18), (12, 0), (4, 2) and (2, 6)

(b) (3,0), (0, 3), (4, 2) and (7, 6)

(c) (5,0), (0, 10), (2, 4) and (2, 6)

(d) (0, 18), (12, 0), (4, 2) and (0, 7)

12. Side is 4 cm shorter than the longest side. If the perimeter of the triangle is at least 61 cm, find the minimum length of the shortest side.

(a) 7 cm

(b) 9 cm

(c) 11 cm

(d) 13 cm

13. Find future value of annuity of ₹ 1000 made annualy for seven yeras at interest rate 16% compounded annaualy. [Given that $(1.16)^7 = 2.8262$]

(a) ₹ 11413.75

(b) ₹ 11000.35

(c) ₹ 8756

(d) ₹ 9892.34

14. Assuming that the discount rate is 7% is p.a. How much would you pay to receive ₹ 500. Growing at 5% annually forever?

(a) ₹ 2,500

(b) ₹ 5,000

(c) ₹ 7,500

(d) ₹ 25,000

15. Rajesh deposits ₹ 3,000 at the start of each quarter in his savings account. If the accaount earns interest 5.75% per annuam compounded quarterly, how much money (in ₹) while he have at the end of 4 years ? [Given that $(1.014375)^{16} = 1.25654$]

(a) ₹ 54,308.6

(b) ₹ 58,553.6

(c) ₹ 68,353.6

(d) ₹ 63,624.4

16. The annual rate of simple interest is 12.5%. In how many years does principal doubles?

(a) 11 years

(b) 9 years

(c) 8 years

(d) 7 years

17. ₹ 5000 is paid every year for 10 years to pay off a loan . What is the loan amount of interest rate be 14% p.a compounded annualy ?

(a) ₹ 26,000.90

(b) ₹ 26080.55

(c) ₹ 15000.21

(d) ₹ 16,345.11

18. ₹ 800 is invested at the end of each month in account paying interest 6% per year compounded monthly. What is the future value of annuity after 10^{th} payment ? [Given that $(1.005)^{10} = 1.0511$]

(a) ₹ 4444

(b) ₹ 8766

(c) ₹ 3491

(d) ₹ 8176

19. Certain sum of money borrowed at simple interest to ₹ 2688 in three years and to ₹ 2784 in four years at the rate per annum equal to

(a) 4%

(b) 6%

(c) 5%

(d) 7%

20. Ravi made of an investment of ₹ 15,000 in a scheme and at the time of maturity the time of maturity the amount was ₹ 25,000. If Compound 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

21. Madhu takes a loan of ₹ 50,000 from ABC Bank LTD.The rate of interest is 10% per annum. The first instalmennt will be paid at the end of five year. Determine the amount (in ₹) of equal instalments, if Madhu wishes to repay the amount in five years.

(a) ₹ 19,510

(b) ₹ 19,430

(c) ₹ 19,310

(d) ₹ 16,630

22. Rajesh invests ₹ 20,000 per year in a stock index fund, with earns 9% per year, for the next ten years.What would be closest value of accumulated investment upon payment of the last installment ? [Given : $(1.09)^{10} = 2.36736$]

(a) ₹ 3,88,764.968

(b) ₹ 3,03,858.564

(c) ₹ 2,68,728.484

(d) ₹ 4,08,718.364

23. An investment is earning compounded interest ₹ 100 invested in the year 2 accumulated to ₹ 105 by year 4. If ₹ 500 invested in the year 5, will become ₹_____by year 10.

(a) ₹ 364.80

(b) ₹ 564.80

(c) ₹ 464.80

(d) ₹ 664.80

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

(a) ₹ 8,000

(b) ₹ 9,000

(c) ₹ 10,000

(d) ₹ 11,000

25. The value of scooter is ₹ 1,00,000 find its depreciation is 10% p.a. Calculte total depreciation value at the end of seven years .

(a) ₹ 47829.70

(b) ₹ 47000.90

(c) ₹ 42709

(d) ₹ 42,000

26. Effective rate of interest does not depend upon

(a) Amount of Principal

(b) Amount of Interest

(c) Number of conversion periods

(d) none of these

27. The number of traingles that can be formed by choosing the vertices from a set of 12 ponts, Seven of which lie on the same lie on the same straight line is :

(a) 185

(b) 175

(c) 115

(d) 105

28. Five bulbs of which three are defective are to be tired in two light-points in a dark-room. In how many trails the room shall be lightened ?

(a) 10

(b) 7

(c) 3

(d) none of these

29. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent ?

(a) 164

(b) 174

(c) 144

(d) 154

30. How many words can be formed with the letters of the word 'ORIENTAL'. So that A and E always oocupy odd places:

(a) 540

(b) 8460

(c) 8640

(d) 8450

31. The number of ways of painting the faces of a cube by 6 different colours is

(a) 30

(b) 36

(c) 24

(d) 1

32. The sum of an AP, whose first is -4 and last term is 146 is 7171. Find the value of n

(a) 99

(b) 100

(c) 101

(d) 102

33. In a geometric progression, the second term is 12 and sixth term is 192. Find 11^{th} term.

(a) 3,072

(b) 1,536

(c) 12,288

(d) 6,144

34. The first and last terms of an arithmetic progression are 5 and 905. Sum of the terms is 45,955. The number of terms is

(a) 99

(b) 100

(c) 101

(d) 102

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

(a) $\sqrt{3}$

(b) $\sqrt{2}$

(c) 4

(d) 2

36. If the sum of n terms of an AP is $(3n^2-n)$ and its common difference is 6, then its term is

(a) 3

(b) 2

(c) 4

(d) 1

37. Two finite sets have m and n elements .The total number of sub sets of first set is 56 more than the total number of subsets of the second set. The value of m and n are

(a) 6,3

(b) 7,6

(c) 5,1

(d) 8,7

38. If $f(p) = \frac{1}{1-p}$, then f^{-1} is

(a) 1-p

(b) $\frac{p-1}{p}$

(c) $\frac{p}{p-1}$

(d) $\frac{1}{p}$

39. Determine f(x), given that $f'(x) = 12x^2 - 4x$ and $f(-3) = 17$

(a) $f(x) = 4x^3-2x^2+143$

(b) $f(x) = 6x^3-x^4+137$

(c) $f(x) = 3x^4-x^3-137$

(d) $f(x) = 4x^3-2x^2-143$

40. $\int_0^1 x.e^x dx$

(a) -1

(b) 1

(c) e^1

(d) 1/e

41. Find the missing term in each of the following series : 6, 13, 25, 51, 101,?

(a) 201

(b) 202

(c) 203

(d) 205

42. Find the missing term in each of the following series : 28, 33, 31, 36, 34,?

(a) 48

(b) 39

(c) 54

(d) 62

43. In a certain code, TEACHER is written as VGCEJGT, How is CHILDREN written in that code?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

44. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?

(a) 2

(b) 4

(c) 5

(d) 6

45. If SUMMER is coded as RUNNER, the code for WINTER will be

(a) SUITER

(b) VIOUER

(c) WALKER

(d) SUFFER

46. From home Neha goes towards North for her college and then she turns left and then turns right, and finally she turns left and reaches college. In which direction her college is situated with respect to her home ?

(a) South-West

(b) North-East

(c) North-West

(d) South-East

47. Y is in the East of X which is in the North of Z. If P is in the South of Z, then in which direction of Y, is P?

(a) North

(b) South

(c) Soth-East

(d) South-West

48. Five villages P, Q, R, S, and T are situated close to each other. P is to the west of Q, R is to the south of P. T is to the north of Q and S is to the east of T. Then, R is in which direction with respect to S?

(a) North-West

(b) South-East

(c) South-West

(d) Data inadequate

49. If South-West becomes North, then what will North-East be?

(a) North

(b) South-East

(c) South

(d) East

50. In a clock at 12 : 30, hour needle is in North direction while minute needle is in South direction. In which direction would be minute needle at 12:45?

(a) North-West

(b) South-East

(c) West

(d) East

51. Five students are standing in a circle. Abhinav is between Alok and Ankur. Apurva is on the left of Abhishek. Alok is on the left of Apurva. Who is sitting next to Abhinav on his right?

(a) Apurva

(b) Ankur

(c) Abhishek

(d) Alok

Directions(Illustrations 52-54) Study the following information carefully and answer the questions given below.

Six friends A, B, C, D, E and F are sitting in a row facing towards North. C is sitting between A and E. D is not at the end. B is sitting at immediate right of E. F is not at the right end but D is sitting at 3rd left of E.

52. How many persons are there to the right of D?

(a) One

(b) Two

(c) Three

(d) Four

53. Which of the following is sitting to the left of D?

(a) F

(b) C

(c) E

(d) A

54. Who is at the immediate left of C?

(a) A

(b) E

(c) Either E or A

(d) Cannot be determined

55. Five persons are sitting on a bench to be photo graphed , S is to the left of N and to the right of B .M is to the right of N . R is between N amd M . Who is sitting immediate right to R.

(a) B

(b) N

(c) M

(d) S

56. B is the brother of A whose only sister is mother of C, D is maternal grandmother of C How is A related to D?

(a) Aunt

(b) Daughter-in-law

(c) Daughter

(d) Nephew

57. If X+Y maens X is the mother of Y; X-Y means X is the brother of Y; X%Y means X is the father of Y and X×Y means X is the sister of Y, Which of the following shows that A is the materanal uncle of B ?

(a) B + D × C - A

(b) B - D% A

(c) A - C + D × B

(d) A + C × D - B

Directions(Question 58-60) Read the following information and answer the questions given below.

Anita is the niece of Prateek's mother. Anita's mother is Prateek's aunt. Rohan is Anita's mother's brother. Rohan's mother is Anita's grandmother. From this information, deduce the relationship between.

58. Rohan's mother is _____to Anita's mother.

(a) Aunt

(b) Mother

(c) No relation

(d) Sister

59. Prateek's and Anita's mother are _____

(a) Cousin sister

(b) Sister-in-law

(c) Friends

(d) Sisters

60. Rohan is Prateek's _____

(a) Brother

(b) Brother-in-law

(c) Uncle

(d) Cousin brothers

61. The distribution of profits of a company follows:

(a) J - shaped frequency curve

(b) U - shaped frequency curve

(c) Bell - shaped frequency curve

(d) Any of these

62. Median of a distribution can be obtained from:

(a) Historgarm

(b) Frequency Polygon

(c) Less than type ogives

(d) None of these

63. Frequency density corresponding to a class interval is the ratio of

(a) Class Frequency to the Total Frequency

(b) Class Frequency to the class Length

(c) Class frequency to the class Frequency

(d) Class Frequency to the Cumulative Frequency.

64. Cost of sugar in a month under the heads raw Materials, labour, direct production and others were 12, 20, 35 and 23 units respectively. What is the difference between the central angles for the largest and smallest components of the cost of sugar?

(a) 72^o

(b) 48^o

(c) 56^o

(d) 92^o

65. In a group of persons, average weight is 60 kg. If the average of males and females taken separately is 80 kg and 50 kg respectively, find the ratio of the number of males to that of females.

(a) 2:3

(b) 3:2

(c) 2:1

(d) 1:2

66. A train covered the first 5 km of its journey at a speed of 30km/hr and next 15 km at a speed of 45 km/hr. The average speed of the train was :

(a) 38 km/hr

(b) 40 km/hr

(c) 36 km/hr

(d) 42 km/hr

67. If $2x + 3y + 4 = 0$ and $v(x) = 6$ then $v(y)$ is :

(a) 8/3

(b) 9

(c) -9

(d) 6

68. If the standard deviation of 1, 2, 3, 4, ... 10 is σ, then the standard deviation of 11, 12, 13, 14, ..., 20 is :

(a) 10σ

(b) $10 + \sigma$

(c) σ

(d) None of these

69. What is the standard deviation of the following series :

Measurements :	**0-10**	**10-20**	**20-30**	**30-40**
Frequency :	1	3	4	2

(a) 81

(b) 7.6

(c) 9

(d) 2.26

70. If the difference between Mean and Mode is 69, then the difference between Mean and Median will be _____:

(a) 63

(b) 31.5

(c) 23

(d) None of these

71. If all observations in a distribution are increased by 6, then the variance of the series will be _____

(a) Increased

(b) Decreased

(c) Unchanged

(d) None of these.

72. Which measure of dispersion is base on the absolute deviation only ?

(a) Range

(b) Standard Deviation

(c) Mean Devaition

(d) Quartile Devation

73. Calculaue the value of 3^{rd} quartile from the following data 40, 35,51, 21, 25, 16, 29, 27, 32

(a) 36.25

(b) 30.25

(c) 25

(d) 35

74. The mean of 100 students was 45. Later on , it was discovered that the marks of two students were misread as 85 and 54 instead of 58 and 45. Find correct mean.

(a) 68

(b) 36

(c) 44.64

(d) 52

75. The arithmetic maen and coefficienct of variation of data set x are respectively, 10 and 30. The variance of 30-2x is

(a) 28

(b) 32

(c) 34

(d) 36

76. The approximate ratio of SD, MD, QD is

(a) 2:3:4

(b) 3:4:5

(c) 15:12:10

(d) 5:6:7

77. The geometric mean of three numbers 40, 50 and x is 10, the value of x is

(a) 5

(b) 4

(c) 2

(d) ½

78. Difference between upper limit and lower limit of classs is known as

(a) Range

(b) Class Mark

(c) Class Size

(d) Class Boundary

79. Let P be a probability function on S = $\{X_1, X_2, X_3\}$ if $P(X_1)=1/4$ and $P(X_3) = 1/3$ then $P(X_2)$ is equal to :

(a) 5/12

(b) 7/12

(c) 3/4

(d) none of these

80. A speaks truth in 60% of the cases and B in 90% of the cases. In what percentage of cases are they likely to contradict each other in stating the same fact :

(a) 36%

(b) 42%

(c) 54%

(d) none of these.

81. A candidate is selected for interview for 3 posts. For the first there are 3 candidates, for the second there are 4 and for the third there are 2. What are the chances of his getting at least one post?

(a) 3/4

(b) 2/3

(c) 1/10

(d) 1

82. A card is drawn from a pack of playing cards and then another card is drawn without the first being replaced. What is the probability of getting two kings :

(a) 7/52

(b) 1/221

(c) 3/221

(d) None of these.

83. The probability of a man hitting the target is 1/4. If he fires 7 times, the probability of hitting the target at least twice is :

(a) $1-\left(\frac{5}{2}\right)\left(\frac{3}{4}\right)^6$

(b) $1-\frac{15}{2}\left(\frac{3}{4}\right)^6$

(c) $1-\frac{5}{6},3^5$

(d) $1-\left(\frac{3}{4}\right)^6$

84. If 5% of the electric bulbs manufactured by a company are defective, use Poisson distribution to find the probability that in a sample of 100 bulbs, 5 bulbs will be defective. [Given : $e^{-5} = 0.007$]

(a) 0.1823

(b) 0.1723

(c) 0.1623

(d) 0.1923

85. In a non- leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is :

(a) $\frac{4}{7}$

(b) $\frac{2}{7}$

(c) $\frac{3}{7}$

(d) $\frac{1}{7}$

86. Examine the validity of the following : Mean and standard deviation of a binomial distribution are 10 and 4 respective :

(a) Not valid

(b) Valid

(c) Both [a] and [b]

(d) Neither [a] nor [b]

87. For a Poisson variate X, P(x=1) =P(x=2) , what is the mean of x ?

(a) 1

(b) 3/2

(c) 2

(d) 5/2

88. Thity balls are serially numbered and placed in bag. Find chance that the first ball drawn is a multiple of 3 or 5

(a) 8/15

(b) 2/15

(c) 1/2

(d) 7/15

89. For a normal distribution , the first and third quartile are given to be 37 and 49, the mode of the distribution is

(a) 37

(b) 49

(c) 43

(d) 45

90. The odds in favour of event A in a trail is 3:1. In a three independent trails , the proabibility of non occurrence of the event A is

(a) 1/64

(b) 1/32

(c) 1/27

(d) 1/8

91. If 4y - 5x = 15 is the regression line of y on x and the coefficient of correlation between x and y is 0.75, what is the value of the regression coefficient of x on y ?

(a) 0.45

(b) 0.9375

(c) 0.6

(d) None of these

92. If the regression line of y on x and of x on y are given by 2x + 3y = -1 and 5x + 6y = -1 then the arithmetic means of x and y are given by.

(a) (1,-1)

(b) (-1,1)

(c) (-1, -1)

(d) (2,3)

93. If correlation co-efficient r between x and y is 0.5 then r between x and –y is

(a) 1

(b) 0.5

(c) -0.5

(d) 0

94. For a positive and perfectly correlated random varaiables, one of the regression coefficeint is 1.4 and the standard devation of X is 2, the variance of Y is

(a) 2.37

(b) 6.76

(c) 6.56

(d) 3.16

95. For n pairs of of observations , the coefficient of concurrent devation is calculated as $\frac{1}{\sqrt{3}}$. If there are six concurrent deviations, n =

(a) 11

(b) 10

(c) 9

(d) 8

96. Consumer Price Index Number goes up from 100 to 200 and salary of a worker is also raised from 300 to 500, then Real Wage is

(a) 300

(b) 250

(c) 600

(d) 350

97. From the following data, find out an Index number for 2022 taking 2021 as base (using simple aggregative method):

Commodities	Price in 2021	Price in 2022
A	80	120
B	220	200
C	300	400

(a) 100

(b) 120

(c) 108

(d) 190

98. From the following chain base index numbers based on 2015, find out new chain base index number for the year 2022 by shifting the base year 2019.

Years	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Index No: (Base 2015)	100	105	95	85	120	110	130	150

(a) 125

(b) 180

(c) 100

(d) 150

99. Laspyres índex number is aweighted aggregate method by taking _____ as weights.

(a) Quanatity consumed in the base year

(b) Quanatity consumed in the current year

(c) Value of items consumed in base year

(d) Vlaue of items consumed in the current year

100. Find the Paasche's Index number for prices from the following

Commodity	**Base year**		**Current year**	
	Price	**Commodity**	**Price**	**Commodity**
A	5	25	6	30
B	3	8	4	10
C	2	10	3	8
D	10	4	3	45

(a) 151.21

(b) 165.28

(c) 157.26

(d) 160.21

Mock Test Paper - Series II: August, 2025

Date of Paper: 28th August, 2025

Time of Paper: 2 P.M. to 4 P.M.

MOCK TEST PAPER II

FOUNDATION COURSE

Paper 3: Quantitative Aptitude

Time: 2 Hours **Marks: 100**

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

   (a) x

   (b) 10

   (c) 1

   (d) None

2. If A: B = 2:5, then (10A + 3B): (5A + 2B) is equal to

   (a) 7:4

   (b) 7:3

   (c) 6:5

   (d) 7:9

3. The ratio compounded of 4:5 and sub-duplicate of a:9 is 8:15. Then value of "a" is

   (a) 2

   (b) 3

   (c) 4

   (d) 5

4. If ½, 1/3,1/5 and 1/x are in proportion, then the value of x will be

   (a) 15/2

   (b) 6/5

   (c) 10/3

   (d) 5/6

5. If $P = x^{1/3} + x^{-1/3}$ then find value of $3p^3 - 9p$

   (a) 3

   (b) ½(x+1/x)

   (c) (x+1/x))

   (d) 2((x+1/x))

6. Fourth proportional to x, 2x, (x+1) is:

   (a) (x+2)

   (b) (x-2)

   (c) (2x+2)

   (d) (2x-2)

7. The value of $\frac{\left(3^{n+1} + 3^{n}\right)}{\left(3^{n+3} - 3^{n+1}\right)}$ is equal to

   (a) 1/5

   (b) 1/6

   (c) ¼

   (d) 1/9

8. $\text{Lim}_{x \to 3} \frac{x^2 - 9}{x - 3}$ is equal to

   (a) 0

   (b) 6

   (c) Does not exist

   (d) -6

9. Let $f(x) = \frac{x^2 - 6x + 9}{x - 3}$, $x \neq 3$, $f(3) = 0$, then f(x) is

   (a) Continuous at x = 3

   (b) Discontinuous at x = 3

   (c) Discontinuous for all x

(d) None of these

10. If $\frac{3x-2}{5x-6}$ is the duplicate ratio of 2/3 then the value of 'x' is

(a) 2

(b) 6

(c) 5

(d) 9

11. If α and β are the roots of the equation $x^2 + 7x + 12 = 0$, then the equation whose roots $(\alpha + \beta)^2$ and $(\alpha - \beta)^2$ will be:

(a) $x^2 - 14x + 49 = 0$

(b) $x^2 - 24x + 144 = 0$

(c) $x^2 - 50x + 49 = 0$

(d) $x^2 - 19x + 144 = 0$

12. Roots of the equation $2x^2 + 3x + 7 = 0$ are α and β then the value of $\alpha\,\beta^{-1} + \beta\,\alpha^{-1}$ is

(a) 2

(b) 3/7

(c) 7/2

(d) -19/14

13. On solving the inequalities $5x + y \leq 100$, $x + y \leq 60$, $x \geq 0$, $y \geq 0$, we get the following situation:

(a) (0,0), (20,0), (10,50), & (0,60)

(b) (0,0), (60,0), (10,50), & (0,60)

(c) (0,0), (20,0), (0,100) & (10,50)

(d) none of these

14. The rules and regulations demand that the employer should employ not more than 5 experienced hands to 1 fresh one and this fact is represented by (Taking experienced person as x and fresh person as y)

(a) $y \geq \frac{x}{5}$

(b) $5y \leq x$

(c) $5y \geq x$

(d) none of these

15. In what time will be a sum of money doubles itself at 6.25% p.a simple interest?

(a) 5 years

(b) 8 years

(c) 12 years

(d) 16 years

16. Mr. X invests ₹ 10,000 every year starting from today for next 10 years suppose interest rate is 8% per annum compounded annually. Calculate future value of the annuity: (Given that $(1+0.08)^{10} = 2.158925$]

(a) ₹ 156454.88

(b) ₹ 144865.625

(c) ₹ 156554.88

(d) none of these

17. The difference between the simple and compound interest on a certain of 3 years at 5% p.a is ₹ 228.75. The compound interest on the sum of for 2 years at 5% per annum is

(a) ₹ 3175

(b) ₹ 3075

(c) ₹ 3275

(d) ₹ 2975

18. How much time would the simple interest on a certain sum be 0.125 times the principal at 10% per annum

(a) $1\frac{1}{4}$ years

(b) $1\frac{3}{4}$ years

(c) $2\frac{1}{4}$ years

(d) $2\frac{3}{4}$ years

19. The time in by which a sum of money is 8 times of itself if it doubles itself in 15 years interest compounded annually.

(a) 42 years

(b) 43 years

(c) 45 years

(d) 46 years

20. Present value of a scooter is ₹ 7290, if its value decreases every year by 10% then the value before 3 years is equal to

(a) 10,000

(b) 10,500

(c) 20,000

(d) 20,500

21. Find the effective rate of interest at 10% p.a when the interest is payable quarterly.

(a) 10.38%

(b) 5%

(c) 5.04%

(d) 4%

22. The difference between in simple interest on a sum invested of ₹ 1500 for 3 years is ₹ 18. The difference in their rate is

(a) 0.4

(b) 0.6

(c) 0.8

(d) 0.10

23. What will be the population after 3 years. When the population increases at the rate 3% in I year, 4% in II year and 5% in III year.

(a) 28,119

(b) 29,118

(c) 27,000

(c) 30,000

24. If ₹ 10,000 is invested at 8% per annum, then compounded quarterly.Then value of investment after 2 years is .

(a) ₹ 11,716.59

(b) ₹ 10,716.59

(c) ₹ 12,715.59

(d) none of these

25. In how many years will a sum of money become double at 5% p.a compound interest

(a) 14 years

(b) 15 years

(c) 16 years

(d) 14.3 years

26. The future value of an annuity of ₹ 1,000 is made annually for 5 years at interest rate of 14% compounded annually [Given that $(1.14)^5 = 1.92541$] is _____

(a) ₹ 5610

(b) ₹ 6610

(c) ₹ 6160

(d) ₹ 5160

27. The number of ways of arranging 6 boys and 4 girls in a row so that all 4 girls are together is:

(a) 6!. 4!

(b) 2 (7! 4!)

(c) 7! 4!

(d) 2. (6! 4!)

28. $15C_{3r}+15C_{r+3}$ then 'r' is equal to

(a) 2

(b) 3

(c) 4

(d) 5

29. If ${}^{n}P_4 = 20\ ({}^{n}P_2)$ then the value of 'n' is _____

(a) -2

(b) 7

(c) -2 and 7 both

(d) None of these.

30. How many different words can be formed with the letters of the word "LIBERTY"

(a) 4050

(b) 5040

(c) 5400

(d) 4500

31. If x, y and z are the terms in G.P, then the term x^2+y^2, $xy + yz$, $y^2 + z^2$ are in

(a) AP

(b) GP

(c) HP

(d) none of the above

32. In a G.P. if fourth term is 3 then the product of first seven terms is

(a) 3^5

(b) 3^7

(c) 3^6

(d) 3^8

33. In a G.P. If the third term of a GP is $\frac{2}{3}$ and 6^{th} term is $\frac{2}{81}$, then the first term is

(a) 6

(b) 1/3

(c) 9

(d) 2

34. Sum upto infinity series $\frac{1}{2}+\frac{1}{3^2}+\frac{1}{2^3}+\frac{1}{3^4}+\frac{1}{2^5}+\ldots..$

(a) 19/24

(b) 24/19

(c) 5/24

(d) none of these

35. If f(x) = $\frac{2+x}{2-x}$, then f^{-1} (x) :

(a) $\frac{2(x-1)}{x+1}$

(b) $\frac{2(x+1)}{x-1}$

(c) $\frac{x+1}{x-1}$

(d) $\frac{x-1}{x+1}$

36. If f : R $\rightarrow$R is a function, defined by $f(x) = 2^x$; then f(x+y) is

(a) f(x) + f(y)

(b) f(x). f(y)

(c) f(x) ÷ f(y)

(d) none

37. If f(x) = x+2, g(x) = 7^x, than g of (x) = ____

(a) $7^x.x + 2.7^x$

(b) $7^x + 2$

(c) $49(7^x)$

(d) none of these

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 of these

39. Evaluate $\int_{-1}^{1}\left(e^x - e^x\right)dx$

(a) 1

(b) 0

(c) -1

(d) none of these

40. if xy =1 then $y^2 + \frac{dy}{dx} = ?$

(a) 1

(b) 0

(c) 2

(d) none of these

41. The missing term of the series 11, 10 _____27, 66.5, 198.5

(a) 14

(b) 16

(c) 21

(d) 19

42. What comes at last place in R, U, X, A , D, ?

(a) E

(b) F

(c) G

(d) H

43. If Z = 52 and ACT = 48, then BAT will be equal to

(a) 39

(b) 41

(c) 44

(d) 46

44. If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?

(a) 246173

(b) 214673

(c) 214763

(d) 216473

45. If E = 5 and **READ** is coded as 7, then what is the code of **'DEAR'**?

(a) 6

(b) 7

(c) 8

(d) 9

46. M is to the East of D, F is to the South of D and K is to the West of F. M is in which direction with respect to K?

(a) South-West

(b) North-West

(c) North-East

(d) South-East

47. A cyclist goes 30 km to North and then turning to goes 40 km. Again he turns to his right and goes 20 km. After this he turns to his right and goes 40 km. How far is the from his starting point?

(a) 0 km.

(b) 10 km.

(c) 25 km.

(d) 40 km.

48. A boy from his home, first walks 20 m in North-West direction then 20 m in South - West direction. Next, he walks 20m South - East direction. Finally, he turns towards his house. In which direction is he moving?

(a) North - West

(b) North-East

(c) South – West

(d) South – East

49. Raju leaves his house and walks 12 km towards North. He turns right and walks another 12 km. He turns right, walks 12 km more and turns left to walk 5 km. How far is he from his home and in which direction?

(a) 7 km east

(b) 10 km east

(c) 17 km east

(d) 24 km eas

50. A child goes 50 meter towards South and then turning to his right, he goes 50 meter. Then, turning to his left, he goes 30 meter. Again he turns to his left and goes 50 meter. How far is he from his initial position?

(a) 30 m

(b) 40 m

(c) 50 m

(d) 80 m

51. D is daughter of E. A is son of D . C is brother of A and B is sister of A . F is brother of D. How F is related to B?

(a) Father-in -Law

(b) Uncle

(c) Brother

(d) Mother-in-law

52. Introducing a boy a girl said, “He is the son of the daughter of the father of my uncle”. Who is the boy to the girl?

(a) Brother

(b) Nephew

(c) Uncle

(d) Son-in-law

53. It is given that “A is the mother of B; B is the sister of C; C is the father of D”. How is A related to D?

(a) Mother

(b) Grandmother

(c) Aunt

(d) Sister

54. Rita told Mani, "The girl I met yesterday at the beach was the youngest daughter of the brother-in-law of my friend's mother."How is the girl related to Rita's friend ?

(a) Cousin

(b) Daughter

(c) Niece

(d) Aunt

55. Sanjay has three daughters, and each daughter has a brother. How many male members are there in the family?

(a) 4

(b) 2

(c) 3

(d) 1

Directions (Q 56-57): Study the following information carefully and answer the questions given below.

I. P, Q, R, S, T, U and V are sitting on a wall and all of them are facing West.

II. S is on the immediate left of R.

III. T is at an extreme end and has Q as his neighbor.

IV. V is between Q and U.

V. S is sitting third from the north end.

56. Who is sitting to the left of S ?

(a) Q

(b) U

(c) T

(d) R

57. Which of the following pairs of people are sitting at the extreme ends?

(a) QV

(b) PR

(c) TP

(d) ST

58. Five girls are sitting on a bench to be photographed. Seema is to the left of Rani and to the right of Bindu. Mary is to the right of Rani. Reeta is between Rani and Mary. Who is sitting immediate right to Reeta?

(a) Bindu

(b) Rani

(c) Mary

(d) Seema

(Directions 59-60) . Four ladies A, B, C and D and four gentlemen E, F, G and H are sitting in circle around a table facing each other

(i) No two ladies or gentlemen are sitting side by side

(ii) C, who is sitting between G and E , facing D

(iii) F is between D and A and facing G

(iv) H is to the right of B

59. Who is immediate neighbor of B ?

(a) G and H

(b) E and F

(c) A and B

(d) None of the above

60. Who is sitting left of A

(a) F

(b) E

(c) C

(d) D

61. Median of a distribution can be obtained from

(a) Frequency polygon

(b) Histogram

(c) Ogives

(d) None of these.

62. The _____ the size of the sample more reliable is the result.

(a) Medium

(b) Smaller

(c) Larger

(d) None of these

63. The Standard deviation of the _____ distribution is called standard error.

(a) Normal

(b) Poisson

(c) Binomal

(d) Sampling

64. For a set of observations, the sum of absolute deviations is _____, when the deviations are taken from the median.

(a) Zero

(b) Maximum

(c) Minimum

(d) None of these

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. The quartiles of a variable are 45, 52 and 65 respectively. Its quartile deviation is

(a) 10

(b) 20

(c) 25

(d) 8.30

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

(a) 25

(b) 30

(c) 40

(d) 20

68. For a moderately skewewd distribution, the median is twice the mean , then the mode is ____ times the median.

(a) 3

(b) 2

(c) $\frac{2}{3}$

(d) $\frac{3}{2}$

69. If average marks for agroup of 30 girls is 80, a group of boys is 70 and combined average is 76, then how many boys are in the group?

(a) 21

(b) 20

(c) 22

(d) 19

70. The median value of the set of observations 48, 36, 72, 87, 19, 66, 56 and 91

(a) 53

(b) 87

(c) 61

(d) 19

71. If two vriables a and b are related by c= ab then GM.of c =

(a) GM of a +GM of b

(b) GM of a×GM of b

(c) GM of a -GM of b

(d) GM of a /GM of b

72. If there are three obsewrvations 15, 20, 25 then the sum of devation of the observations from their AM is.

(a) 0

(b) 5

(c) -5

(d) 10

73. The mean weight of 15 students is 110 kg. The mean weight of 5 of them is 100 kg. and of another five students is 125 kg. then the mean weight of the remaining students is :

(a) 120

(b) 105

(c) 115

(d) None of these

74. If the Arithmetic mean between two numbers is 64 and the Geometric mean between them is 16. The Harmonic Mean between them is _____.

(a) 64

(b) 4

(c) 16

(d) 40

75. The regression coefficients remain unchanged due to

(a) Shift to origin

(b) Shift to scale

(c) Always

(d) Never

76. If the plotted points in a scatter diagram lie from upper left to lower right, then the correlation is

(a) Positive

(b) Zero

(c) Negative

(d) none of these.

77. The covariance between two variables is

(a) Strictly positive

(b) Strictly negative

(c) Always 0

(d) Either positive or negative or zero.

78. If the coefficient of correlation between two variables is –0 9, then the coefficient of determination is

(a) 0.9

(b) 0.81

(c) 0.1

(d) 0.19.

79. For a probability of a random variable x is given below :

X:	1	2	4	5	6
P:	0.15	0.25	0.2	0.3	0.1

What is the Standrard deviation of x ?

(a) 1.49

(b) 1.56

(c) 1.69

(d) 1.72

80. Given that for two events A and B, P (A) = 3/5, P (B) = 2/3 and P (AUB) = 3/4, what is P (A/B)?

(a) 0.655

(b) 13/60

(c) 31/60

(d) 0.775

81. If 2x + 3y + 4 = 0 and V(x) = 6 then V(y) is

(a) 8/3

(b) 9

(c) 9

(d) 6

82. X and Y stand in a line with 6 other people. What is the probability that there are 3 persons between them?

(a) 1/5

(b) 1/6

(c) 1/7

(d) 1/3

83. Four unbiased coins are tossed simultaneously. The expected number of heads is :

X:	0	1	2	3	4
P(x)	1/16	4/16	6/16	4/16	1/16

(a) 1

(b) 2

(c) 3

(d) 4

84. Assume that the proabailityfor rain on a day is 0.4 . An umbrella salesman can earn ₹ 400 per day in case of rain on that day will lose ₹100 per day if there is no rain. The expected eranings (in ₹) per day of the salesman is .

(a) 400

(b) 200

(c) 100

(d) 0

85. The covraince 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

86. What is the probability of getting 3 heads if 6 unbaised coins are tossed simultaneously?

(a) 0.3125

(b) 0.25

(c) 0.6825

(d) 0.50

87. The mode of the binomial distribution for which the mean is 4 varaince 3 is equal to?

(a) 4

(b) 4.5

(c) 4.25

(d) 4.1

88. For Poisson Distribution :

(a) Mean and Standard Deviation are equal

(b) Mean and Vraince are equal

(c) Standard Devaiation and Variance are equal

(d) Both (a) and (b) are equal

89. If avaraiate x has , mean>variance , then the distribution will be ____

(a) Binomial Distribution

(b) Poisson Distribution

(c) Normal Distribution

(d) T-Distribution

90. An example of a bi-parametric continuous probability distribution

(a) Binomial

(b) Poisson

(c) Normal

(d) Chi-square

91. For a poisson variate X, P(x=2) =3 P(x=4) , then the standard deviation of X is

(a) 2

(b) 4

(c) $\sqrt{2}$

(d) 3

92. What is the mean of X having the following density function?

$$f(x) = \frac{1}{4\sqrt{2\prod}} e^{-\frac{(x-10)^2}{32}} \text{ for } -\infty < x < \infty$$

(a) 10

(b) 4

(c) 40

(d) none of these

93. The divations are minimum when taken from

(a) Mean

(b) Median

(c) Mode

(d) GM

94. Histogram is useful to determine graphically the value of

(a) Arithmetic Mean

(b) Median

(c) Mode

(d) HM

95. If x and y are related as 3x-4y = 20 then the Quartile divation of x is 12, then the Quartile deviation of y is :

(a) 14

(b) 15

(c) 16

(d) 9

96. The base year____

(a) Is the reference year from which changes in the index are measured

(b) Is always last year

(c) Is the first year the index is created

(d) Is the current year the index is created

97. Monthly salary of an employee was ₹ 10,000 in the year 2000 and it was increased to ₹ 20,000 in the year 2013 while the consumer price index number is 240 in year 2013 with the base year 2000, what should be his salary in comparison of consumer price index in the year 2013 ?

(a) 2,000

(b) 16,000

(c) 24,000

(d) None

98. Find the Paasche's Index number for prices from the following

Commodity	Base year		Current year	
	Price	Commodity	Price	Commodity
A	1	6	3	5
B	3	5	8	5
C	4	8	10	6

(a) 261.36

(b) 265.48

(c) 274.32

(d) 282

99. Index numbers are not helpful in

(a) Framining Economic Policies

(b) Revealing Trend

(c) Forecasting

(d) Identifying errors

100. The weight average of price relatives of commodities when the weight is equal to the value of commodities in base year yields _____index number

(a) Fisher's Ideal

(b) Laspyres

(c) Paasches

(d) Marshall-Edgeworth

Mock Test Paper - Series I: December, 2025

Date of Paper: 19th December, 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. If $x = \sqrt[3]{28}$ and $y = \sqrt[3]{27}$ find the value of $x + y - \frac{1}{x^2 + xy + y^2}$

   (a) 6

   (b) 5

   (c) 1

   (d) 0

2. Solve the following equation for x $\log_x (8x-3) - \log_x 4 = 2$

   (a) $\frac{3}{4}, \frac{1}{4}$

   (b) $\frac{3}{2}, \frac{1}{2}$

   (c) $-\frac{3}{4}, \frac{1}{4}$

   (d) $\frac{3}{4}, -\frac{1}{4}$

3. The product of $\sqrt[3]{2}.\sqrt[4]{2}.\sqrt[12]{32}$ equals

   (a) $\sqrt{2}$

   (b) 2

   (c) $\sqrt[12]{2}$

   (d) $\sqrt[12]{32}$

4. If $2^x = 4^y = 8^z$ and $\frac{1}{2x}+\frac{1}{4y}+\frac{1}{6z}=\frac{24}{7}$, then the value of z is

(a) $\frac{7}{16}$

(b) $\frac{7}{32}$

(c) $\frac{7}{48}$

(d) $\frac{7}{64}$

5. Three types of wheat costing ₹ 18 per kg, ₹ 20 per kg and ₹ 25. per kg mixed together. If the mixed variety sold at ₹ 22 per kg, then the ratio in which then these types of wheat should be mixed respectively is -

(a) 1:2:3

(b) 2:2:3

(c) 2:3:1

(d) 1:1:2

6. The age of a man is four times the sum of the ages of his two sons and after 10 years, his age will be double the sum of their ages. The present age of the man is -

(a) 56 years

(b) 45 years

(c) 60 years

(d) 64 years

7. 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

8. The roots of the cubic equation $x^3 - 7x + 6 = 0$ are

(a) 1, 2 and 3

(b) 1, –2 and 3

(c) 1, 2 and –3

(d) 1, –2 and –3

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

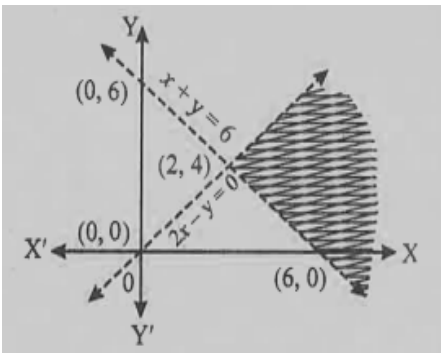
(a) $x^2 - 16x - 25 = 0$

(b) $x^2 - 16x + 25 = 0$

(c) $x^2 - 16x - 5 = 0$

(d) none of these

10. The shaded are is represented by which of the following option ?



(a) x+y > 6, 2x-y> 0, x>0

(b) x+y < 6, 2x-y> 0, x<0

(c) x+y > 6, 2x-y< 0, x>0

(d) x+y > 6, 2x-y> 0, x<0

11. A dietician recommends mixture of two kinds of foods to a person so that mixture contains at least 45 units of carbs, 25 units of protein, 15 units of fat and 15 units of fibre. The above contents of nutrients are available in the foods as below:

	Carbs	Protein	Fat	Fibre
Food - 1	20	5	3	2
Food - 2	10	2	4	5

If 'x' units of food-1 is mixed with 'y' units of food-2, how dietician recommendation can be expressed?

(a) $20x + 10y \leq 45$; $5x + 2y \geq 25$; $3x + 4y \leq 15$; $2x + 5y \geq 15$; $x \geq 0$; $y \geq 0$

(b) $20x + 10y \leq 25$; $5x + 2y \geq 45$; $3x + 4y \leq 15$; $2x + 5y \geq 15$; $x \geq 0$; $y \geq 0$

(c) $20x + 10y \geq 45$; $5x + 2y \geq 25$; $3x + 4y \geq 15$; $2x + 5y \geq 15$; $x \geq 0$; $y \geq 0$

(d) $20x + 10y \leq 45$; $5x + 2y$

12. The present value of sequence of payments of ₹ 800 made at the end of every 6 month and continuing forever, if money is worth 4% p.a. compounded semi-annually is

(a) ₹ 20,000

(b) ₹ 40,000

(c) ₹ 60,000

(d) ₹ 80,000

13. What sum of money invested now could establish a scholarship of ₹ 2500, which is to be awarded at end of every month forever, if money is worth 4% compounded annually

(a) ₹ 62,500

(b) ₹ 1,25,000

(c) ₹ 31,250

(d) none of these

14. In how many years will a sum of money becomes four times at 12% p.a. simple interest?

(a) 18 years

(b) 21 years

(c) 25 years

(d) 28 years

15. Manoj invests ₹ 12,000 at 6% per annum simple interest to obtain a total amount of ₹ 14,880. What is the time for which the amount was invested

(a) 3 years

(b) 4 years

(c) 2 years

(d) 5 years

16. The simple interest if the principal is ₹ 2,000 and the rate and time are roots of the equation $x^2 - 11x + 30 = 0$

(a) ₹ 500

(b) ₹ 600

(c) ₹ 700

(d) ₹ 800

17. The effective rate of interest does not depend upon

(a) Amount of Principal

(b) Amount of Interest

(c) Number of Conversion periods

(d) none of these

18. The future value of an annuity of ₹ 5,000 is made annually for 8 years at interest rate of 9% compounded annually is [Given that, $(1.09)^8 = 1.99256$]

(a) ₹ 55,142.22

(b) ₹ 65,142.22

(c) ₹ 65,532.22

(d) ₹ 57,425.22

19. Suppose your parent decides to open a PPF account in a bank towards your name with ₹ 10,000 every year starting from today for next years. When you receive and get 8.5% per annum interest rate compounded annually. What is the present value of this annuity?

(a) ₹ 83,042

(b) ₹ 80,900

(c) ₹ 90,100

(d) none

20. What will be the future value of an annuity ₹ 2500 made annually for 12 years at an interest rate of 5% compounded annually? If $(1.05)^{12} = 1.7958$

(a) ₹ 37588.58

(b) ₹ 39790.00

(c) ₹ 40873.13

(d) ₹ 42603.68

21. The Earning Per Share (EPS) of a company for five years is given below:

Year	2019	2020	2021	2022	2023
EPS	40	25	40	60	90

Calculate the compounded Annual Growth Rate (CAGR) of EPS.

(a) 24.47%

(b) 23.47%

(c) 22.47%

(d) 21.47%

22. If the initial investment of ₹ 4,00,000 becomes ₹ 6,00,000 in 24 months, then the compound Annual Growth Rate (CAGR) is:

(a) 30.33%

(b) 22.4%

(c) 19.46%

(d) 14.47%

23. How much money is required to be invested every year as to accumulate ₹ 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest. [Given: $(1.1)^{10} = 2.59734$]

(a) ₹ 37,467

(b) ₹ 37,476

(c) ₹ 37,647

(d) ₹ 37,674

24. The number of 4 letter words with or without meaning that can formed out of the letters of the word 'WONDER' if repetition letters not allowed

(a) 24

(b) 6^4

(c) 4^6

(d) 360

25. The number of six-digit numbers can be formed by using the digits 1,2,1,2,0,2 is

(a) 50

(b) 60

(c) 110

(d) 10

26. In an examination there four multiple choice questions and each question has four choices. Number of ways fails to get all answer correct is

(a) 256

(b) 254

(c) 255

(d) 63

27. In a party every person shakes hands with every other person. If there are 105 handshakes in total, find the number of persons in the party.

(a) 15

(b) 14

(c) 21

(d) 22

28. The Sum of an Infinite GP is 10, -8, 6.4….is

(a) $\frac{50}{9}$

(b) $\frac{48}{9}$

(c) $\frac{42}{9}$

(d) $\frac{40}{9}$

29. if nth term of an AP is 2n+1, the sum of its first 20 terms of this A.P Is

(a) 400

(b) 420

(c) 440

(d) 480

30. Let a, b, c be in A.P. If P is A.M between a and b and q is the A.M. between b and c, then b is equal to

(a) $\frac{p+q}{2}$

(b) $\frac{p-q}{2}$

(c) $\frac{q-p}{2}$

(d) $\frac{pq}{2}$

31. If the sum of two extreme numbers of an A.P. with four terms is 8 and the product of remaining two middle terms is 15, then the greatest number will be

(a) 5

(b) 7

(c) 9

(d) 11

32. If A = {1,2,3,4,5}, B = {2,4,6} and C = {3,4,6} then (AUB)$\cap$C is

(a) {3,4,6}

(b) {1,2,3}

(c) {1,4,3}

(d) none of these

33. if A= {a, b}, B= {x, y, z} then the number of relations from B to A

(a) 8

(b) 16

(c) 32

(d) 64

34. In an election, two candidates A and B contested. y% of the total voters voted for A and (y+30) % for B. if 20% of the voters did not vote, then y =

(a) 30

(b) 25

(c) 40

(d) 35

35. Which of the following relations is a function?

(a) R = {(4,6), (3,9), (-11,6), (3,11)}

(b) R = {(1,2), (2,4), (2,6), (3,5)}

(c) R = {(2,1), (4,3), (6,5), (8,7) (10,9)}

(d) R = {(0,1), (1,3), (2,4), (3,1), (3,5)}

36. The slope of the tangent to the curve $y = x^2-x$ at the point where line y=2 cuts the curve in first quadrant is

(a) 2

(b) 3

(c) –3

(d) None of these

37. if the total cost producing x units of a commodity given by $C(x) = \frac{1}{3}x^3 + 2x^2 - 5x + 10$, then the marginal cost when x= 5 is

(a) ₹ 25

(b) ₹ 20

(c) ₹ 30

(d) ₹ 50

38. If the total cost function of producing x units of a commodity is given by $360-12x+2x^2$, then the level of output at which the total cost is minimum is

(a) 24

(b) 12

(c) 6

(d) 3

39. if the cost function of a product is given by MC = $10-4x+3x^2$and fixed cost is ₹ 500, then the total cost function is

(a) $10x-2x^2+x^3$

(b) $500+10x-2x^2+x^3$

(c) $-4+6x$

(d) $500+10x-8x^2+9x^3$

40. if the Marginal revenue function of a commodity is MR = $2x-9x^2$, then the revenue function is

(a) $2x^2-9x^3$

(b) $2-18x$

(c) x^2-3x^3

(d) $18+x^2-3x^3$

41. Find the next term of the series; 1, 5, 14, 30, 55, 91,?

(a) 130

(b) 140

(c) 150

(d) 160

42. Find the missing value in the series; 51, 52, 60, 87, 151,....., 492.

(a) 195

(b) 276

(c) 317

(d) 420

43. In a certain code language, if TOUR is written as 1234, CLEAR is written as 56784 and SPARE is written as 90847. Find the code for TEARS.

(a) 17847

(b) 14847

(c) 15247

(d) 17849

44. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?

(a) 318826

(b) 318286

(c) 618826

(d) 338816

45. In a series of letters, which one is the odd one out: BDFH, JLNP, RTVX, ZBDE?

(a) BDFH

(b) JLNP

(c) TVX

(d) ZBDE

46. Laxman went 15 km to the north, then he turned west and covered 10 km. Then he turned south and covered 5 km, finally turning to east he covered 10 km. In which direction he is moving now?

(a) East

(b) West

(c) North

(d) South

47. Manu wants to go to the market. He starts from his house towards the north and reaches a crossing after 30 m. He turns towards east, goes 10 m till the second crossing and turns again, moves towards south straight for 30 m where the marketing complex exits. In which direction is the market from his house?

(a) North

(b) South

(c) East

(d) West

48. Deepika starts walking straight towards East. After walking 65m, she turns to the left and walks 25m straight. Again she turns to be left and walks a distance of 40m. At what distance and in which direction currently she is from the initial point?

(a) 35.35 m in North-East

(b) 35.35 m in South-West

(c) 25 m in North

(d) 25 m in West

49. Mr. X walks 14 km towards north. From there he walks 8 km towards south. Then he walks 8 km towards the west. How far and in which direction is he with reference to his starting point?

(a) 10 km, North-West

(b) 10 km, West

(c) 7 km, East

(d) 7 km, West

50. Sunitha walked 30m towards the east, took a right turn and walked 40m, then she took a left turn and walked 30m. In which direction is she now from the starting point?

(a) North-East

(b) East

(c) South-East

(d) South

51. Six persons M, N, O, P, Q and R are sitting in two rows with three persons in each row. Both the rows are in front of each other. Q is not at the end of any row. P is second to the left of R. O is the neighbour of Q and diagonally opposite to P. N is the neighbour of R. Who is in front of N?

(a) R

(b) Q

(c) P

(d) M

52. Five persons are sitting on a bench to be photographed, S is to the left of N and to the right of B. M is to the right of N. R is between N and M. Who is sitting immediate right to R.

(a) B

(b) N

(c) M

(d) S

53. Five players named as A, B, C, D and E are sitting on a bench, facing South and are waiting to be interviewed by a selector. The person C is an immediate neighbour of both A and B. The person A is the fourth person from the right end. If E is to the right of B, then where is E sitting?

(a) Fifth from the right end

(b) Fourth from the right end

(c) Fifth from the left end

(d) Fourth from the left end

54. Six friends A, B, C, D, E and F are sitting in a row facing towards North. C is sitting between A and E. D is not at the end. B is sitting immediate right of E. F is not at the right end but D is sitting at 3rd left of E. Who is at the immediate left of C?

(a) A

(b) E

(c) Either E or A

(d) Cannot be determined

55. Six girls, named P, Q, R, S, T, and V, are seated in a circle, all facing the center.

The following statements are given:

1. T is not seated between Q and S but instead, between two other individuals.
2. P is positioned immediately to the left of V.
3. R is located four seats to the right of P.

Which of the following statements is not true?

(a) V is seated just to the right of P.

(b) T is seated just to the right of V.

(c) R is positioned second to the left of T.

(d) P is seated second to the right of R.

56. A husband and wife had five married sons and each of these had four children. How many members are there in the family?

(a) 50

(b) 40

(c) 32

(d) 36

57. Pointing to the lady in the photograph, Seema said, “Her son’s father is the son-in-law of my mother.” How is Seema related to the lady?

(a) Sister

(b) Mother

(c) Cousin

(d) Aunt

58. A is B’s brother. C is D’s father. E is B’s mother. A and D are brothers. How is E related to C?

(a) Sister

(b) Sister-in- law

(c) Niece

(d) Wife

59. A is the mother of D and sister of B. B has a daughter C who is married to F. G is the husband of A. How is G related to D?

(a) Uncle

(b) Husband

(c) Son

(d) Father

60. If “A # B” means A is father of B, “A* B” means A is brother of B, “A @ B” means A is mother of B, then which of the following is correct about G @ T # P?

(a) G is mother of P

(b) P is father of T

(c) T is son of G

(d) P is brother of T

61. What does an Ogive represent?

(a) The cumulative frequency and class boundary

(b) The frequency and class boundary

(c) The frequency and cumulative frequency

(d) The frequency of the class interval

62. Frequency density corresponding to a class interval is the ratio of

(a) Class Frequency to the Total Frequency

(b) Class Frequency to the class Length

(c) Class frequency to the class Frequency

(d) Class Frequency to the Cumulative Frequency.

63. The Secondary data is collected by:

(a) Observation method.

(b) International source like World Bank.

(c) Interview method.

(d) Mailed questionnaire method.

64. Standard Error can be described as

(a) The error committed in k sampling

(b) The error committed in sample survey

(c) The error committed in estimating parameter

(d) Standard deviation of Statistic

65. If the difference between Mean and Mode is 69, then the difference between Mean and Median will be _____:

(a) 63

(b) 31.5

(c) 23

(d) None of these

66. Cost of sugar in a month under the heads raw materials, labour, direct production and others were 12, 20, 35 and 23 units respectively. What is the difference between the central angles for the largest and smallest components of the cost of sugar?

(a) 72°

(b) 48°

(c) 56°

(d) 92°

67. The mean of a group X is 70 and the mean of group Y is 85. If the number of observations in group Y is five times that of group X, then the combined mean of both the groups is

(a) 80

(b) 75

(c) 77.5

(d) 82.5

68. Which of the following is not a type of sampling?

(a) Probability

(b) Non-Probability

(c) Stand-alone

(d) Mixed

69. Exit polls are an example of which method of collecting data?

(a) Random sampling

(b) Investigation

(c) Census

(d) Quota Sampling

70. A Professor has given assignment to students in a Statistics class. A student Jagan computes the arithmetic mean and standard deviation for a set of 100 observations as 50 and 5 respectively. Later on, Sonali points out to Jagan that he has made a mistake in taking one observation as 100 instead of 50. What would be the correct mean if the wrong observation is corrected?

(a) 50.5

(b) 49.9

(c) 49.5

(d) 50.1

71. If two variables x and y are related by $2x + 3y-7 = 0$ and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the coefficient of mean deviation of y about its mean is

(a) –5

(b) 12

(c) 50

(d) 4

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

(a) 25

(b) 30

(c) 40

(d) 20

73. The arithmetic mean and coefficient of variation of data set x are respectively 10 and 30. The variance of $30 – 2x$ is

(a) 28

(b) 32

(c) 34

(d) 36

74. The quartiles of a variable are 45, 52 and 65 respectively. Its quartile deviation is

(a) 10

(b) 20

(c) 25

(d) 8.30

75. If the quartile deviation is 12 and the first quartile is 25, then the value of the third quartile is

(a) 37

(b) 49

(c) 61

(d) 60

76. In a city with a crime rate of 60%, the probability that among a group of 5 incidents, at least 4 are reported accurately is

(a) $\frac{1}{3125}$

(b) $\frac{1053}{3125}$

(c) $\frac{810}{3125}$

(d) $\frac{243}{3125}$

77. A coin with probability for head as 15 is tossed 100 times, then the standard deviation of the number of heads turned up is

(a) 3

(b) 4

(c) 7

(d) 1 0

78. When p = 0.5, the distribution is

(a) Asymmetrical

(b) Symmetrical

(c) Both of above

(d) None of above

79. If mean and standard deviation of a binomial distribution is 10 and 2 respectively, q will be ___

(a) 1

(b) 0.8

(c) 0.6

(d) 0.4

80. For a normal distribution, the ratio of mean deviation to the standard deviation is:

(a) 0.4

(b) 0.6

(c) 0.8

(d) 1.0

81. If X and Y are two independent normal variables with means 10 and 12, and standard deviations (S.D.) 3 and 4 respectively, then $(X + Y)$ is normally distributed with:

(a) Mean = 22 and S.D. = 7

(b) Mean = 22 and S.D. = 25

(c) Mean = 22 and S.D. = 5

(d) Mean = 22 and S.D. = 49

82. If Origin is shifted by 5, what will happen?

(a) SD will increase by 5

(b) QD will increase by 5

(c) MD will increase by 5

(d) There will be no change in SD

83. For the first 20 natural numbers, the standard deviation is

(a) 5.77

(b) 7.75

(c) 5.64

(d) 6.54

84. A machine is made of two parts A and B. The manufacturing process of each part is such that probability of defective in part A is 0.08 and that B is 0.05. What is the probability that the assembled part will not have any defect?

(a) 0.934

(b) 0.864

(c) 0.85

(d) 0.874

85. If $P(\bar{A} \cup \bar{B}) = \frac{5}{6}$, $P(A) = \frac{1}{2}$ and $P(B) = \frac{2}{3}$ what is $P(A \cup B)$?

(a) 1

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

(c) $\frac{2}{3}$

(d) $\frac{4}{9}$

86. The chance of getting 7 or 11 in a throw of 2 dice is

(a) $\frac{7}{9}$

(b) $\frac{5}{9}$

(c) $\frac{2}{9}$

(d) None of these

87. Let P be the probability function on $S = (X_1, X_2, X_3)$ if $P(X_1) = 1/4$ and $P(X_3) = 1/3$, then $P(X_2)$ is equal to

(a) 5/12

(b) 7/12

(c) 3/4

(d) None of these

88. Ticket 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 multiple of 3 or 7?

(a) 1/5

(b) 2/5

(c) 3/5

(d) None of these

89. The Interval $(\mu - 3\sigma, \mu + 3\sigma)$ covers

(a) 95% area of normal distribution

(b) 96% area of normal distribution

(c) 99% area of normal distribution

(d) All but not 0.27% area of a normal distribution

90. The two lines of regression are given by $8x + 10y = 25$ and $16x + 5y = 12$ respectively. If the variance of x is 25, what is the standard deviation of y?

(a) 16

(b) 8

(c) 64

(d) 4

91. The equations of two lines of regression are $4x + 3y + 7 = 0$ and $3x + 4y + 8 = 0$. Find the correlation coefficient between x and y.

(a) –0.75

(b) 0.25

(c) –0.92

(d) 1.25

92. Out of the following, which one affects the regression co-efficient?

(a) Change of origin only

(b) Change of scale only

(c) Change of scale & origin both

(d) Neither change of origin nor change of scale.

93. For n pairs of observations, the coefficient of concurrent deviation is calculated as $\frac{1}{\sqrt{3}}$ if there are six concurrent deviations then *n* =

(a) 11

(b) 10

(c) 9

(d) 8

94. The correlation between two variables x and y is found to be 0.4. What is the correlation between 2x and (–y)?

(a) 0.4

(b) –0.4

(c) 0.6

(d) None of these

95. Which of the following is not a test of adequacy in the context of index numbers?

(a) Unit test

(b) Square test

(c) Circular test

(d) Factor reversal test

96. Fisher's index number is called as ideal index number because it satisfies

(a) Factor reversal test

(b) Time reversal test

(c) Both factor and time reversal test

(d) Circular test

97. Circular test is satisfied by which of the following index?

(a) Laspeyre's index

(b) Paasche's index

(c) Fisher's index

(d) Simple geometric mean of price relatives

98. During this period, the salary of employees as per pay commission recommendations was received from ₹ 23,000 to ₹ 29,500. In real terms, an employee should get the following additional amount (upto the nearest whole number) to maintain their previous standard of living:

(a) ₹ 1,168

(b) ₹ 666

(c) ₹ 909

(d) ₹ 6,500

99. If Laspeyer's index is A and Fisher's index is B. Find the value of Paasche's index.

(a) $\frac{B^2}{A}$

(b) $\frac{A^2}{B}$

(c) $\frac{A}{B}$

(d) $\frac{2B}{A}$

100. In price index, when a new commodity is required to be added, which of the following index is used?

(a) Shifted price index

(b) Splicing price index

(c) Deflating price index

(d) Value price Index

Mock Test Paper - Series II: December, 2025

Date of Paper: 2nd January, 2026

Time of Paper: 2 P.M. to 4 P.M.

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 hours **Marks: 100**

1. If $4^x = 5^y = 20^z$, then is equal to

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

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

   (c) $\frac{1}{xy}$

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

2. The value of $\log 1 \log_5\left(1+\frac{1}{5}\right) + \log_5\left(1+\frac{1}{6}\right) + ... + \log_5\left(1+\frac{1}{624}\right)$

   (a) 2

   (b) 3

   (c) 5

   (d) Cannot be determined

3. If $x = \log_{24} 12$, $y = \log_{36} 24$, $z = \log_{48} 36$, then $xyz + 1 = ?$

   (a) 2xy

   (b) 2xz

   (c) 2yz

   (d) 2z

4. If roots of equation $x^2 + x + r = 0$ are '$\propto$' and 'β' and $\propto^3 + \beta^3 = -6$. Find the value 'r'?

   (a) −5/3

   (b) 7/3

   (c) −4/ 3

   (d) 1

5. If $|x - 2| + |x - 3| = 7$ then, 'x' will be equal to

   (a) 6

   (b) -1

   (c) 6 and – 1

   (d) None of the above

6. Solve for x of the Inequalities $2 \leq \frac{3x-2}{5} \leq 4$ where $x \leftarrow N$

   (a) {5, 6, 7}

   (b) {3, 4, 5, 6}

   (c) {4, 5, 6}

   (d) {4, 5, 6, 7}

7. A man starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was ₹ 1500 after 4 years of service and ₹ 1800 after 100 years of service, what was his starting salary and what is the annual increment in rupees?

   (a) ₹ 1300, ₹ 50

   (b) ₹ 1100,

   (c) ₹ 1500, ₹ 30

   (d) none

8. The salaries of A, B and C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be the new ratio of their salaries?

   (a) 3 : 3 : 10

   (b) 10 : 11 : 20

   (c) 23 : 33 : 60

(d) cannot be determined

9. One root of the equation; $x^2 – 2(5 + m) x + 3(7 + m) = 0$ is reciprocal of the other. Find the value of m.

(a) −20/3

(b) 7

(c) 1/7

(d) 1/17

10. The solution of the following system of linear equation $2x – 5y + 4 = 0$ and $2x + y – 8 = 0$ will be

(a) (2, –3)

(b) (1, –4)

(c) (3, 2)

(d) (–2, 2)

11. On solving the inequalities $6x + y \geq 18$; $x + 4y \geq 12$; $2x + y \geq 10$, we get the following situation:

(a) (0, 18), (12, 0), (4, 2) and (2, 6)

(b) (3, 0), (0, 3), (4, 2) and (7, 6)

(c) (5, 0), (0, 10), (4, 2) and (7, 6)

(d) (0, 18), (12, 0), (4, 2), (0, 0) and (7, 6)

12. A person invested ₹8,000 at the rate of 10% compounded annually. Find the compound interest gained in 3 years.

(a) ₹ 2684

(b) ₹ 10,648

(c) ₹ 10,000

(d) ₹ 12,648

13. Find the effective rate of interest if an amount of 30,000 deposited in a bank for 1 year at the rate of 10% per annum compounded semi-annually.

(a) 10.05%

(b) 10.10%

(c) 10.20%

(d) 10.25%

14. What will be the population after 3 years, when present population is 1,00,000 and the population increase at 3% in 1st year, at 4% second year and 5% in third year?

(a) 1,12,476

(b) 1,15,476

(c) 1,20,576

(d) 1,25,600

15. Determine the present value of perpetuity of ₹50,000 per month at the rate interest 12% per annum is

(a) ₹ 45,00,000

(b) ₹ 50,00,000

(c) ₹ 55,00,000

(d) ₹ 60,00,000

16. Mr. A borrows ₹ 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance, then what will be the equal annual instalment?

(a) ₹ 58,239.84

(b) ₹ 58,729.84

(c) ₹ 68,729.84

(d) None of these

17. How much money is required to be invested every year as to accumulate ₹ 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest. [Given: $(1.1)^{10} = 2.59734$]

(a) ₹ 37,467

(b) ₹ 37,476

(c) ₹ 37,647

(d) ₹ 37,674

18. Ranju wants to accumulate ₹ 4,91,300 in her savings account after three years. The rate of interest offered by bank is $16\frac{1}{4}$ %per annum compounded annually. How much amount should she invest today to achieve her target amount?

(a) ₹ 4,09,600

(b) ₹ 4,37,500

(c) ₹ 4,90,900

(d) ₹4,90,600

19. If the difference between the compound interest compounded annually and simple interest on a certain amount at 10% per annum for two years is ₹ 372, then the principal amount is

(a) ₹ 37,000

(b) ₹ 37,200

(c) ₹ 37,500

(d) None of these

20. How much amount is required to be invested every year so as to accumulate ₹ 30,000 at the end of 10 years if the interest compounded annually at 10%? [Given; A(10, 0.1) = 15.9364]

(a) ₹ 1882.36

(b) ₹ 1828.30

(c) ₹ 1832.65

(d) ₹ 1853.65

21. A perpetuity has a cash flow of ₹ 625 and a required rate of return of 8%. If the cash flow is expected to grow at a constant rate of 4% per year, then the intrinsic value of this perpetuity (present value of growing perpetuity) is;

(a) ₹ 15,625

(b) ₹ 13,000

(c) ₹ 14, 250

(d) ₹ 16,667

22. In an account paying interest at the rate of 9% per year compounded monthly, ₹ 200 is invested at the end of each month. What is the future value of this annuity after 10^{th} payment? [Where, $(1.0075)^{10} = 1.0775$]

(a) ₹ 1022

(b) ₹ 2066

(c) ₹ 2044

(d) ₹ 2155

23. Suppose Mr. X invested ₹ 5000 every year starting from today in mutual fund for next 10 years. Assuming that average return compounded annually is at 18% per annum. What is the future value?

(a) ₹ 1,83,677.68

(b) ₹ 1,38,678.85

(c) ₹ 1,83,776.53

(d) ₹ 1,38,774.55

24. 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) 5040

(b) 7020

(c) 5400

(d) 30240

25. If there are 40 guests in a party. If each guest takes a shake hand with all the remaining guests. Then the total number of hands shake is

(a) 780

(b) 840

(c) 1560

(d) 1600

26. A fruit basket contains 7 apples, 6 bananas and 4 mangoes. How may 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

27. n articles are arranged in such a ways that 2 articles never come together. The number of such arrangement is

(a) $(n - 2) \times (n - 1)!$

(b) $(n - 1) \times (n - 2)!$

(c) $n!$

(d) none of these

28. If the fourth term of an Arithmetic Progression (A.P.) series is zero, then what is the ratio of the twenty-fifth term to the eleventh term?

(a) 4

(b) 5

(c) 3

(d) 2

29. The 3rd term of arithmetic progression is 7 and Seventh term is 2 more than thrice of third term. The common difference is

(a) 4

(b) 3

(c) 5

(d) 6

30. If the A.M. and G.M. for two numbers are 6.50 and 6 respectively then the two numbers are

(a) 6 and 7

(b) 9 and 4

(c) 10 and 3

(d) 8 and 5

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 numbers x, 8, y in Geometric Progression (G.P) and the numbers x, y, –8 are in Arithmetic Progression (A.P). Find the values of x and y respectively.

(a) 4, 16

(b) 16, 4

(c) 4, 8

(d) 8, 4

33. If A = {1, 2, 3, 4}, B = {2, 4, 6, 8} and C = {3, 4, 5, 6}, then value of A – (B ∪ C) is

(a) {1, 2, 3}

(b) {2, 3, 4, 5}

(c) {1}

(d) {0}

34. Let R is the set of real number, such that the function f : R ® R and g : R ® R are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x – 3$. Find (fog):

(a) $4x^2 + 6x + 1$

(b) $x^2 + 6x + 1$

(c) $4x^2 – 6x + 1$

(d) $x^2 – 6x + 1$

35. If $f(x) = x^2 + 2$, then the given function is

(a) Odd function

(b) Even function

(c) Neither odd or even

(d) none of these

36. The range of the function $f(x) = 3x – 2$ is

(a) $(–\infty, \infty)$

(b) R – {3

(c) $(–\infty, 0)$

(d) $(0, -\infty)$

37. If $x^y \times y^x = 16$, then the value of dy/dx at (2, 2) is:

(a) –1

(b) 0

(c) 2

(d) –2

38. The maxima and minima of the function $y = 2x^3 - 15x^2 + 36x + 10$ occurs respectively at

(a) x = 2 and x = 3

(b) x = 1 and x = 3

(c) x = 3 and x = 2

(d) x = 3 and x = 1

39. The equation of the curve in the form y = f(x) if the curve passes through the point (1, 0) and f '(x) = 2x – 1, then f(x) is:

(a) $y = x^2 - x$

(b) $x = y^2 - y$

(c) $y = x^2$

(d) None of these

40. The equation of the curve which passes through the point (1, 2) and has the slope $3x - 4$ and the point of (x, y) is

(a) $2y = 3x^2 - 8x + 9$

(b) $y = 6x^2 - 8x + 9$

(c) $y = x^2 - 8x + 9$

(d) $2y = 3x^2 - 8x + c$

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

(a) 7239 7329

(b) 7239

(c) 7932

(d) 7529

42. In certain system of code STATEMENT is coded as TNEMETATS, then how the word can POLITICAL be coded?

(a) LACATILOP

(b) LACTILIOP

(c) OPILITACL

(d) LACITILOP

43. In the following series, which number will replace the question mark 23, 29, 31, 37, 41, 43,?

(a) 45

(b) 54

(c) 47

(d) 49

44. The number in place of question mark in: 7, 26, 63, 124, 215, ?, 511 is

(a) 342

(b) 343

(c) 441

(d) 421

45. Which of the following is odd one?

(a) CEHL

(b) KMPT

(c) OQTX

(d) NPSV

46. Arun started walking 5 km towards North, then he turned left and walked 3 km. Again, he turned left and walked 5 km. Then the total number of km he walked is

(a) 8 km

(b) 13 km

(c) 3 km

(d) 5 km

47. Ravi started walking 10 km towards East from his home. He turned right and walked 5 km to the South to reach his school. In which direction is his school from his home?

(a) North-East

(b) North-West

(c) South -East

(d) South- West

48. A person is facing towards the North. He moves 70° clockwise direction. Again he is moving 300° clockwise direction. Now, in which direction is he presently facing?

(a) North-West

(b) South-East

(c) North-East

(d) South-West

49. Shrikant is facing East and turns 120° in the clockwise direction and then turns 180° in the anticlockwise direction. Which direction is Shrikant facing now?

(a) East

(b) North-East

(c) North

(d) South-West

50. A and B start moving towards each other from two places apart. After walking 60 m, B turns left and goes then 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?

(a) 80 m

(b) 70 m

(c) 40 m

(d) 60 m

51. Seven friends O, P, Q, R, S, T and U are watching movie sitting in a row. S is sitting at one extreme end. Q is sitting second to the right of S. P is sitting between O and Q. Both U and O are not sitting at extreme end. R is sitting immediate left to T. Who is sitting in the middle?

(a) O

(b) P

(c) Q

(d) U

52. Six friends A, B, C, D, E and F are sitting in a row facing towards North. C is sitting between A and E. D is not at the end. B is sitting at immediate right of E. F is not at the right end but D is sitting at 3rd left of E. How many persons are there to the right of D?

(a) One

(b) Two

(c) Three

(d) Four

(53-55 Direction: Study the following information carefully and answer the questions given below.)

A, B, C, D, E, F and G are sitting in a row facing North:

(1) F is to the immediate right of E.

(2) E is 4th to the right of G.

(3) C is the neighbour of B and D.

(4) Person who is third to the left of D is at one of the ends.

53. Who are the neighbours of B?

(a) C and D

(b) C and G

(c) G and F

(d) C and E

54. What is the position of A?

(a) Between E and D

(b) Extreme left

(c) Centre

(d) Extreme right

55. Who are the left to C?

(a) Only B

(b) G, B and D

(c) G and B

(d) D, G, F and A

56. Pointing to the old man Kailash said “his son is my son’s uncle! How is Kailash related to an old man?

(a) Brother

(b) Either son or son in law

(c) Father

(d) Grand father

57. A reads a book and finds the name of the author familiar. The author ‘B’ is the paternal uncle of C. C is the daughter of A. How is B related to A?

(a) Brother

(b) Sister

(c) Father

(d) Uncle

58. If “A #B” means A is father of B, “A * B” means A is brother of B, “A @ B” means A is mother of B, then which of the following is correct about G @T #P?

(a) G is mother of P

(b) P is father of T

(c) T is son of G

(d) P is brother of T

59. A family has a man, his wife, their four sons and their wives. The family of every son also has 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

60. 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

61. In tabular presentation of data, stub is _____.

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

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

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

(d) Right part of the table

62. A less than ogive **curve** is drawn by plotting

(a) Less than Cumulative Frequencies on the vertical axis

(b) More than Cumulative Frequencies on the vertical axis

(c) Highest frequencies on vertical axis

(d) Lowest frequencies on vertical axis

63. Consider the following data where class length is given as 5. Calculate the number of class intervals; 59, 68, 78, 57, 44, 73, 40, 60, 70, 47

(a) 5

(b) 6

(c) 7

(d) 8

64. The following data relate to the wages of a group of workers:

Wages (in ₹)	No. of workers
Below 100	15
Below 200	38
Below 300	65
Below 400	90

(a) 25

(b) 65

(c) 90

(d) 27

65. What is the purpose of stratified random sampling?

(a) To ensure that every individual in the population has an equal chance of being selected.

(b) To divide the population into subgroups and then randomly sample from each subgroup.

(c) To select individuals based on the availability and convenience.

(d) To select a fixed percentage of the population

66. If from a population with 20 members, a random sample without replacement of 2 members is taken, the number of all such samples is

(a) 300

(b) 190

(c) 50

(d) 600

67. The mean salary of a group of 50 persons is ₹ 5850. Later on it discovered that the salary of one has been wrongly taken as ₹ 8000 instead of ₹ 7800. The corrected mean salary is

(a) ₹ 5854

(b) ₹ 5846

(c) ₹ 5640

(d) None

68. A Professor has given assignment to students in a Statistics class. A student Jagan computes the arithmetic mean and standard deviation for a set of 100 observations as 50 and 5 respectively. Later on, Sonali points out to Jagan that he has made a mistake in taking one observation as 100 instead of 50. What would be the correct mean if the wrong observation is corrected?

(a) 50.5

(b) 49.9

(c) 49.5

(d) 50.1

69. In a dataset, 25 percent of values are smaller than 30 and one-fourth of values are larger than 70, then the coefficient of quartile deviation is _____ %.

(a) 40

(b) 50

(c) 60

(d) 70

70. If x and y are related as $4x + 2y + 12 = 0$ and mean deviation of x is 4. 5, then the mean deviation of y is

(a) 9

(b) –9

(c) 1.1

(d) 4.5

71. The Arithmetic Mean (A.M.) and Mode of the data are 32 and 26 respectively, then find the median of the data.

(a) 30

(b) 12

(c) 6

(d) 29

72. Consider the data sets; X = {–6, 2, –2, 6}, Y = {4, 8, 2, 6} and Z = {103, 100, 102, 101}. Let Sx, Sy & Sz be the standard deviations of the sets X, Y and Z respectively. We have the relations,

(a) Sx < Sy < Sz

(b) Sz < Sy < Sx

(c) Sz < Sx < Sy

(d) Sx < Sz < Sy

73. For the first 20 natural numbers, the standard deviation is

(a) 5.77

(b) 7.75

(c) 5.64

(d) 6.54

74. If 2x + 3y + 4 = 0 and v(x) = 6, then v(y) is

(a) 8/3

(b) 9

(c) -9

(d) 6

75. Find out the mode from the following data: 100, 110, 125, 225, 325, 125, 90, 80, 455, 375,125

(a) 325

(b) 110

(c) 455

(d) 125

76. If the mode of a data is 18 and mean is 24, then median is

(a) 18

(b) 24

(c) 22

(d) 21

77. 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) 125

(b) 130

(c) 120

(d) 100

78. Which of the following measure of central tendency depends on the position of the observation?

(a) Mean

(b) Median

(c) Mode

(d) Harmonic Mean

79. Which one of the following measures of central tendency is based on only fifty percent (50%) of the central values?

(a) Geometric Mean

(b) Harmonic Mean

(c) Median

(d) Mode

80. Two dice are thrown simultaneously. Find the probability that the sum of digits on the two dice would be 8 or more.

(a) 5/18

(b) 5/12

(c) 5/36

(d) 7/12

81. Which of the following pairs of events are mutually exclusive?

(a) A: Archna was born in India. B: She is a fine lawyer.

(b) A: The student studies in a school. B: He studies Geography.

(c) A: Sita is 16 years old. B: She is a good folk dancer.

(d) A: Imran is under 15 years. B: He is a voter of Delhi.

82. A number is selected at random from the set {1, 2, ..., 99}. The probability that it is divisible by 9 or 11 is

(a) 19/100

(b) 19/99

(c) 10/100

(d) 10/99

83. A random variable X has the following probability density function; f (x) = 6x(1 – x), $0 \leq x \leq 1$, then the mean is

(a) 1/3

(b) 1/12

(c) 1/4

(d) 1/2

84. The probability of success of three students in CA Foundation examination are 1/5, 1/4 and 1/3 respectively. Find the probability that at least two students will get success.

(a) 3/4

(b) 2/5

(c) 1/6

(d) 1/5

85. If 3 percent of ceramic cup manufactured by a company are known to be defective. What is the probability that a sample of 100 cups are taken from the production process, of that company would contain exactly one defective cup?

(a) 0.03

(b) 0.15

(c) 0.09

(d) 0.30

86. If 5% of the families in large population city do not used gas as a fuel, what will be the probability of selecting 10 families in a random sample of 100 families who do not use gas as a fuel? [Given that $e^{-5} = 0.0067$]

(a) 0.038

(b) Zero

(c) 0.018

(d) 0.048

87. The number of accidents in a year attributed to taxi drivers in a locality follows Poisson distribution with average 2. Out of 500 taxi drivers of that area, what is the number of drivers with at least 3 accidents in a year? (Given that e = 2.718)

(a) 162

(b) 180

(c) 201

(d) 190

88. The mean deviation of normal distribution is approximately equal to___

(a) 3.14σ

(b) 0.5σ

(c) 1.14σ

(d) $0.8\ \sigma$

89. Poisson probability distribution is appropriately applied in

(a) The height of students in the university.

(b) The distribution of passing of students in university examinations.

(c) Tossing of a coin hundred times.

(d) Number of deaths by a rare disease.

90. If the points of inflexion of a normal curve are 6 and 14, then standard deviation of the distribution is

(a) 4

(b) 8

(c) 9.17

(d) 32

91. For 9 college students group, the sum of squares of differences in ranks for History and Hindi marks was found to be 62, then what is the value of rank correlation coefficient?

(a) 1

(b) 0.48

(c) 0.52

(d) 0.87

92. Which one of the following statements is correct regarding limit of the two regression coefficient?

(a) No limit.

(b) Must be positive.

(c) One positive and the other negative.

(d) Product of the regression coefficients must be numerically less than unity.

93. If r = 0.8, b_{yx} = 0.6, b_{xy} = 0.5, $\bar{x}$ = 5 and $\bar{y}$ = 3, then the regression equation y on x is

(a) y = 0.96x – 3.7

(b) y = 0.6x – 6.0

(c) y = 0.8 x

(d) y = 0.6x

94. The two lines of regression are given by 8x + 10y = 25 and 16x + 5y = 12 respectively. If the variance of x is 25, what is the standard deviation of y ?

(a) 16

(b) 8

(c) 64

(d) 4

95. If the rank correlation coefficient between marks in Management and Mathematics for a group of students is 0.6 and the sum of the squares of the difference in rank is 66. Then what is the number of students in the group?

(a) 9

(b) 10

(c) 11

(d) 12

96. Fisher index number is _____ of Laspeyres and Paasche's Index Number.

(a) A.M

(b) G.M

(c) H.M

(d) None of these

97. Weighted geometric mean of relative formula satisfies _____ test while Factor Reversal test is satisfied by _____.

(a) Time Reversal, Fisher's Ideal index

(b) Time Reversal, Laspeyres's index

(c) Factor Reversal, Paasche's index

(d) Factor Reversal, Fisher's Ideal index

98. The Laspeyre's index number is a weighted aggregate method by taking _____ as weight.

(a) quantity consumed in the base year

(b) quantity consumed in the current year

(c) value of items consumed in the base year

(d) value of items consumed in the current year.

99. The simple index number for the current year using simple aggressive method for the following data

Commodity base	Base Year Price (P_0)	Base Year Price (P_1)
Wheat	80	100
Rice	100	150
Gram	120	250
Pulses	200	300

(a) 200

(b) 150

(c) 240

(d) 160

100. The cost-of-living index number in year 2015 and 2018 were 97.5 and 115 respectively. The salary of a person in 2015 was 195000. How much additional salary was required for him in 2018 to maintain the same standard of living as in 2015.

(a) ₹ 30,000

(b) ₹ 40,000

(c) ₹ 35,000

(d) ₹ 45,000

Mock Test Paper - Series I: April 2026

Date of Paper: 18th April 2026

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

FOUNDATION COURSE

PAPER – 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. If $(4)^3 \times \left(\sqrt{2^n}\right) = 2^n$, then n is

   (a) 10

   (b) 12

   (c) 13

   (d) 14

2. The values of x for the equation $x^2 + 9x + 18 = 6 - 4x$ are

   (a) (1, 12)

   (b) (–1, –12)

   (c) (1, –12)

   (d) (–1,12)

3. The solution of the equation (p+2) (p–3) + (p+3) (p–4) = p (2p–5) is

   (a) 6

   (b) 7

   (c) 5

   (d) None of these

4. The denominator of a fraction exceeds the numerator by 7 and if the 2 is added to the denominator, then the fraction becomes $\frac{3}{4}$. Find the original common fraction.

   (a) $\frac{15}{22}$

   (b) $\frac{7}{14}$

(c) $\frac{9}{16}$

(d) $\frac{11}{18}$

5. The value of $\sqrt{6+\sqrt{6+\sqrt{6+.....\infty}}}$ is

(a) -3

(b) 2

(c) 3

(d) 4

6. $\log\frac{p^2}{qr}+\log\frac{q^2}{pr}+\log\frac{r^2}{pq}=$

(a) pqr

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

(c) 1

(d) 0

6. A bag contained 25 paise, 10 paise and 5 paise are in the ratio 3:2:1. The total value of ₹ 40, the number of 5 paise coins is

(a) 45

(b) 48

(c) 40

(d) 20

8. If $2^x \times 3^y \times 5^z = 720$ then the value of x, y, z?

(a) 4, 2, 1

(b) 1, 2, 4

(c) 2, 4, 1

(d) 1, 4, 2

9. A man wants to cut three lengths from a single piece of board of length 91 cm. The Second length is to be 3 cm longer than the shortest and third length is to be twice as the shortest. What is the possible length for the shortest piece?

(a) 18

(b) 20

(c) 15

(d) 22

10. A labour can be paid under two methods of given below:

(i) ₹ 600 fixed and ₹ 50 per hour

(ii) ₹ 170 per hour

If a labour job work takes 'r' hours to complete, find out the value of r for which the method (ii) gives the labour gets the better wages.

(a) x = 6

(b) x = 4

(c) x =3

(d) x =2

11. The time required to produce a unit of product A is 3 hours and that for product B is 5 hours. The total available time is 220 hours. If x and y are the number of units of A and B that are produced then

(a) $3x+2y =220$

(b) $3x+5y\geq220$, $x\geq0$, $y\geq0$

(c) $3x+5y\leq220$, $x\geq0$, $y\geq0$

(d) $5x+2y\geq220$, $x\geq0$, $y\geq0$

12. What must be added to each term of the ratio 49:68. So that it becomes 3:4?

(a) 3

(b) 5

(c) 8

(d) 9

13. Find future value of annuity of ₹ 1000 made annually for seven years at interest rate 16% compounded annually. [Given that $(1.16)^7 = 2.8262$]

    (a) ₹ 11413.75

    (b) ₹ 11000.35

    (c) ₹ 8756

    (d) ₹ 9892.34

14. Assuming that the discount rate is 7% is p.a. How much would you pay to receive ₹ 500. Growing at 5% annually forever?

    (a) ₹ 2,500

    (b) ₹ 5,000

    (c) ₹ 7,500

    (d) ₹ 25,000

15. Rajesh deposits ₹ 3,000 at the start of each quarter in his savings account. If the account earns interest 5.75% per annum compounded quarterly, how much money (in ₹) while he has at the end of 4 years? [Given that $(1.014375)^{16} = 1.25654$]

    (a) ₹ 54,308.6

    (b) ₹ 58,553.6

    (c) ₹ 68,353.6

    (d) ₹ 63,624.4

16. The annual rate of simple interest is 12.5%. In how many years does principal doubles?

    (a) 11 years

    (b) 9 years

    (c) 8 years

    (d) 7 years

17. ₹ 5000 is paid every year for 10 years to pay off a loan. What is the loan amount of interest rate be 14% p.a. compounded annually?

    (a) ₹ 26,000.90

    (b) ₹ 26080.55

    (c) ₹ 15000.21

(d) ₹ 16,345.11

18. ₹ 800 is invested at the end of each month in account paying interest 6% per year compounded monthly. What is the future value of annuity after 10^{th} payment? [Given that $(1.005)^{10} = 1.0511$]

(a) ₹ 4444

(b) ₹ 8766

(c) ₹ 3491

(d) ₹ 8176

19. Certain sum of money borrowed at simple interest to ₹ 2688 in three years and to ₹ 2784 in four years at the rate per annum equal to

(a) 4%

(b) 6%

(c) 5%

(d) 7%

20. Ravi made of an investment of ₹ 15,000 in a scheme and at the time of maturity the time of maturity the amount was ₹ 25,000. If Compound 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

21. Madhu takes a loan of ₹ 50,000 from ABC Bank LTD. The rate of interest is 10% per annum. The first instalment will be paid at the end of five year. Determine the amount (in ₹) of equal instalments, if Madhu wishes to repay the amount in five years.

(a) ₹ 19,510

(b) ₹ 19,430

(c) ₹ 19,310

(d) ₹ 16,630

22. Rajesh invests ₹ 20,000 per year in a stock index fund, with earns 9% per year, for the next ten years. What would be closest value of accumulated investment upon payment of the last instalment? [Given: $(1.09)^{10} = 2.36736$]

(a) ₹ 3,88,764.968

(b) ₹ 3,03,858.564

(c) ₹ 2,68,728.484

(d) ₹ 4,08,718.364

23. An investment is earning compounded interest ₹ 100 invested in the year 2 accumulated to ₹ 105 by year 4. If ₹ 500 invested in the year 5, will become ₹ _____by year 10.

(a) ₹ 364.80

(b) ₹ 564.80

(c) ₹ 464.80

(d) ₹ 664.80

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

(a) ₹ 8,000

(b) ₹ 9,000

(c) ₹ 10,000

(d) ₹ 11,000

25. The value of scooter is ₹ 1,00,000 find its depreciation is 10% p.a. Calculate total depreciation value at the end of seven years.

(a) ₹ 47829.70

(b) ₹ 47000.90

(c) ₹ 42709

(d) ₹ 42,000

26. Effective rate of interest does not depend upon

(a) Amount of Principal

(b) Amount of Interest

(c) Number of conversion periods

(d) none of these

27. The number of triangles that can be formed by choosing the vertices from a set of 12 points, Seven of which lie on the same lie on the same straight line is:

(a) 185

(b) 175

(c) 115

(d) 105

28. Five bulbs of which three are defective are to be tired in two light-points in a dark-room. In how many trails the room shall be lightened?

(a) 10

(b) 7

(c) 3

(d) none of these

29. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent?

(a) 164

(b) 174

(c) 144

(d) 154

30. How many words can be formed with the letters of the word 'ORIENTAL'. So that A and E always oocupy odd places:

(a) 540

(b) 8460

(c) 8640

(d) 8450

31. The number of ways of painting the faces of a cube by 6 different colours is

(a) 30

(b) 36

(c) 24

(d) 1

32. The sum of an AP, whose first is -4 and last term is 146 is 7171. Find the value of n

(a) 99

(b) 100

(c) 101

(d) 102

33. In a geometric progression, the second term is 12 and sixth term is 192. Find 11^{th} term.

(a) 3,072

(b) 1,536

(c) 12,288

(d) 6,144

34. The first and last terms of an arithmetic progression are 5 and 905. Sum of the terms is 45,955. The number of terms is

(a) 99

(b) 100

(c) 101

(d) 102

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

(a) $\sqrt{3}$

(b) $\sqrt{2}$

(c) 4

(d) 2

36. If the sum of n terms of an AP is $(3n^2-n)$ and its common difference is 6, then its 1^{ST} term is

(a) 3

(b) 2

(c) 4

(d) 1

37. Two finite sets have m and n elements. The total number of sub sets of first set is 56 more than the total number of subsets of the second set. The value of m and n are -

(a) 6,3

(b) 7,6

(c) 5,1

(d) 8,7

38. Evaluate $\lim_{x \to a} \frac{(x+2)^{5/3} - (a+2)^{5/3}}{x-a}$ is

(a) $5/2(a+2)^{2/3}$

(b) $5/3(a+2)^{2/3}$

(c) $5/3(a+2)^{3/2}$

(d) none of these

39. Determine f(x), given that $f'(x) = 12x^2-4x$ and $f(-3) = 17$

(a) $f(x) = 4x^3-2x^2+143$

(b) $f(x) = 6x^3-x^4+137$

(c) $f(x) = 3x^4-x^3-137$

(d) $f(x) = 4x^3-2x^2-143$

40. $\int_0^1 x.e^x dx$

(a) -1

(b) 1

(c) e^1

(d) 1/e

41. Find the missing term in each of the following series : 6, 13, 25, 51, 101,?

(a) 201

(b) 202

(c) 203

(d) 205

42. Find the missing term in each of the following series : 28, 33,31,36, 34,39, ?

(a) 48

(b) 37

(c) 54

(d) 62

43. In a certain code, TEACHER is written as VGCEJGT, How is CHILDREN written in that code?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

44. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?

(a) 2

(b) 4

(c) 5

(d) 6

45. If SUMMER is coded as RUNNER, the code for WINTER will be

(a) SUITER

(b) VIOUER

(c) WALKER

(d) SUFFER

46. From home Neha goes towards North for her college and then she turns left and then turns right, and finally she turns left and reaches college. In which direction her college is situated with respect to her home?

(a) South-West

(b) North-East

(c) North-West

(d) South-East

47. Y is to the East of X, which is to the North of Z. If P is to the South of Z, then P is in which direction with respect to Y.

(a) North

(b) South

(c) Soth-East

(d) South-West

48. Five villages P, Q, R, S, and T are situated close to each other. P is to the west of Q, R is to the south of P. T is to the north of Q and S is to the east of T. Then, R is in which direction with respect to S?

(a) North-West

(b) South-East

(c) South-West

(d) Data inadequate

49. If South-West becomes North, then what will North-East be?

(a) North

(b) South-East

(c) South

(d) East

50. In a clock at 12 : 30, hour needle is in North direction while minute needle is in South direction. In which direction would be minute needle at 12:45?

(a) North-West

(b) South-East

(c) West

(d) East

51. Five students are standing in a circle. Abhinav is between Alok and Ankur. Apurva is on the left of Abhishek. Alok is on the left of Apurva. Who is sitting next to Abhinav on his right?

(a) Apurva

(b) Ankur

(c) Abhishek

(d) Alok

Directions (Questions 52-54) Study the following information carefully and answer the questions given below.

Six friends A, B, C, D, E and F are sitting in a row facing towards North. C is sitting between A and E. D is not at the end. B is sitting at immediate right of E. F is not at the right end but D is sitting at 3rd left of E.

52. How many persons are there to the right of D?

(a) One

(b) Two

(c) Three

(d) Four

53. Which of the following is sitting to the left of D?

(a) F

(b) C

(c) E

(d) A

54. Who is at the immediate left of C?

(a) A

(b) E

(c) Either E or A

(d) Cannot be determined

55. Five persons are sitting on a bench to be photographed, S is to the left of N and to the right of B. M is to the right of N. R is between N and M. Who is sitting immediate right to R.

(a) B

(b) N

(c) M

(d) S

56. B is the brother of A whose only sister is mother of C, D is maternal grandmother of C How is A related to D?

(a) Aunt

(b) Daughter-in-law

(c) Daughter

(d) Nephew

57. If X+Y means X is the mother of Y; X-Y means X is the brother of Y; X%Y means X is the father of Y and X×Y means X is the sister of Y, Which of the following shows that A is the maternal uncle of B?

(a) B+D×C-A

(b) B-D%A

(c) A-C+D×B

(d) A+C×D-B

58. C is sister of B. D is father of A. A is brother of B. D and E are married couple. How is C related to E?

(a) Daughter

(b) Son

(c) Mother

(d) Father

59. 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

60. Pointing to a photograph. Bajpai said, "He is the son of the only daughter of the father of my brother." How Bajpai is related to the man in the photograph?

(a) Nephew

(b) Brother

(c) Father

(d) Maternal Uncle

61. Which sampling technique is most appropriate when a person wants to ensure that subgroups are proportionally represented?

(a) Stratified Sampling

(b) Simple Random Sampling

(c) Multistage Sampling

(d) Systematic Sampling

62. Non-probability Sampling is also known as:

(a) Stratified Sampling

(b) Simple Random Sampling

(c) Purposive or Judgment Sampling.

(d) Cluster Sampling

63. The number of possible samples of size n out of N population units without replacement is

(a) NCn

(b) (N)n

(c) N^2

(d) n !

64. Finite population correction is

(a) $\sqrt{\frac{(N-n)}{(N-1)}}$

(b) $\sqrt{\frac{(N-1)}{(N-n)}}$

(c) $\sqrt{\frac{(N-n)}{(n-1)}}$

(d) none of these

65. In a group of persons, average weight is 60 kg. If the average of males and females taken separately is 80 kg and 50 kg respectively, find the ratio of the number of males to that of females.

(a) 2:3

(b) 3:2

(c) 2:1

(d) 1:2

66. A train covered the first 5 km of its journey at a speed of 30km/hr and next 15 km at a speed of 45 km/hr. The average speed of the train was:

(a) 38 km/hr

(b) 40 km/hr

(c) 36 km/hr

(d) 42 km/hr

67. If $2x + 3y + 4 = 0$ and $v(x) = 6$ then $v(y)$ is:

(a) 8/3

(b) 9

(c) -9

(d) 6

68. If the standard deviation of 1, 2, 3, 4, ... 10 is σ, then the standard deviation of 11, 12, 13, 14, ..., 20 is:

(a) 10σ

(b) $10+\sigma$

(c) σ

(d) None of these

69. What is the standard deviation of the following series :

Measurements:	0-10	10-20	20-30	30-40
Frequency:	1	3	4	2

(a) 81

(b) 7.6

(c) 9

(d) 2.26

70. If the difference between Mean and Mode is 69, then the difference between Mean and Median will be _____:

(a) 63

(b) 31.5

(c) 23

(d) None of these

71. If all observations in a distribution are increased by 6, then the variance of the series will be _____

(a) Increased

(b) Decreased

(c) Unchanged

(d) None of these.

72. Which measure of dispersion is base on the absolute deviation only?

(a) Range

(b) Standard Deviation

(c) Mean Devaition

(d) Quartile Devation

73. Calculate the value of 3^{rd} quartile from the following data 40, 35, 51, 21, 25, 16, 29, 27, 32

(a) 36.25

(b) 30.25

(c) 25

(d) 35

74. The mean of 100 students was 45. Later on, it was discovered that the marks of two students were misread as 85 and 54 instead of 58 and 45. Find correct mean.

(a) 68

(b) 36

(c) 44.64

(d) 52

75. The arithmetic mean and coefficient of variation of data set x are respectively, 10 and 30. The variance of 30-2x is

(a) 28

(b) 32

(c) 34

(d) 36

76. The approximate ratio of SD, MD, QD is

(a) 2:3:4

(b) 3:4:5

(c) 15:12:10

(d) 5:6:7

77. The geometric mean of three numbers 40, 50 and x is 10, the value of x is

(a) 5

(b) 4

(c) 2

(d) ½

78. Difference between upper limit and lower limit of class is known as

(a) Range

(b) Class Mark

(c) Class Size

(d) Class Boundary

79. If $P(A) = \frac{1}{3}, P(B) = \frac{1}{2}$ and $P(AUB) = \frac{5}{6}$, then events A and B are

(a) independent

(b) independent and mutually exclusive

(c) mutually exclusive

(d) none of these

80. A and B two events such that P(AUB) = $\frac{3}{4}, P(A \cap B) = \frac{1}{4}$ and $(P\left(\overline{A}\right) = \frac{2}{3}$, then $P(\overline{A} \cap B)$ is equal to

(a) $\frac{3}{8}$

(b) $\frac{5}{8}$

(c) $\frac{5}{12}$

(d) $\frac{1}{4}$

81. Five persons A, B, C, D and E are standing in a queue of a ration shop. The probability A and B are always together -

(a) $\frac{1}{4}$

(b) $\frac{2}{3}$

(c) $\frac{2}{5}$

(d) $\frac{3}{5}$

82. A card is drawn from a pack of playing cards and then another card is drawn without the first being replaced. What is the probability of getting two kings:

(a) 7/52

(b) 1/221

(c) 3/221

(d) none of these.

83. The probability of a man hitting the target is 1/4. If he fires 7 times, the probability of hitting the target at least twice is :

(a) $1-\left(\frac{5}{2}\right)\left(\frac{3}{4}\right)^6$

(b) $1-\frac{15}{2}\left(\frac{3}{4}\right)^6$

(c) $1-\frac{5}{6}3^5$

(d) $1-\left(\frac{3}{4}\right)^6$

84. If 5% of the electric bulbs manufactured by a company are defective, use Poisson distribution to find the probability that in a sample of 100 bulbs, 5 bulbs will be defective. [Given : $e^{-5} = 0.007$]

(a) 0.1823

(b) 0.1723

(c) 0.1623

(d) 0.1923

85. In a non- leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is:

(a) $\frac{4}{7}$

(b) $\frac{2}{7}$

(c) $\frac{3}{7}$

(d) $\frac{1}{7}$

86. Examine the validity of the following: Mean and standard deviation of a binomial distribution are 10 and 4 respective:

(a) Not valid

(b) Valid

(c) Both [a] and [b]

(d) Neither [a] nor [b]

87. For a Poisson variate X, P(x=1) =P(x=2), what is the mean of x ?

(a) 1

(b) 3/2

(c) 2

(d) 5/2

88. Thirty balls are serially numbered and placed in bag. Find chance that the first ball drawn is a multiple of 3 or 5

(a) 8/15

(b) 2/15

(c) 1/2

(d) 7/15

89. For a normal distribution, the first and third quartile are given to be 37 and 49, the mode of the distribution is.

(a) 37

(b) 49

(c) 43

(d) 45

90. The odds in favour of event A in a trail is 3:1. In a three independent trails, the probability of non-occurrence of the event A is

(a) 1/64

(b) 1/32

(c) 1/27

(d) 1/8

91. If 4y - 5x = 15 is the regression line of y on x and the coefficient of correlation between x and y is 0.75, what is the value of the regression coefficient of x on y?

(a) 0.45

(b) 0.9375

(c) 0.6

(d) none of these

92. If the regression line of y on x and of x on y are given by 2x+ 3y = -1 and 5x + 6y = -1 then the arithmetic means of x and y are given by.

(a) (1, -1)

(b) (-1,1)

(c) (-1, -1)

(d) (2,3)

93. For a P×Q bivariate frequency table, the maximum number of marginal distribution is

(a) P

(b) Q

(c) 1

(d) 2

94. The maximum value of correlation coefficient is

(a) 0

(b) 1

(c) -1

(d) none of these

95. The regression coefficients remain unchanged due to a

(a) Shift of origin

(b) Shift of scale

(c) Both (a) and (b)

(d) (a) or (b).

96. Consumer Price Index Number goes up from 100 to 200 and salary of a worker is also raised from 300 to 500, then Real Wage is

(a) 300

(b) 250

(c) 600

(d) 350

97. The Circular Test is known as:

(a) $P_{01} \times P_{12} \times P_{20} = 1$

(b) $P_{12} \times P_{01} \times P_{20} = 1$

(c) $P_{20} \times P_{12} \times P_{01} = 1$

(d) $P_{02} \times P_{21} \times P_{12} = 1$

98. In the data group Bowley's and Laspyre's index number is as follows. Bowley's index number =150, Laspyre's index number = 180 then Paasche's index number is

(a) 120

(b) 30

(c) 165

(d) None of these

99. Laspyres índex number is a weighted aggregate method by taking _____ as weights.

(a) Quantity consumed in the base year

(b) Quantity consumed in the current year

(c) Value of items consumed in base year

(d) Vlaue of items consumed in the current year

100. Find the Paasche's Index number for prices from the following

Commodity	Base year		Current year	
	Price	Commodity	Price	Commodity
A	5	25	6	30
B	3	8	4	10
C	2	10	3	8
D	10	4	3	45

(a) 151.21

(b) 165.28

(c) 157.26

(d) 160.21

Mock Test Paper - Series II: April 2026

Date of Paper: 27th April 2026

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

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. Salries of Ravi and Suneet are in the ratio 2:3. If the salary of each is increased by ₹ 4000, the new ratio becomes 40:57 . What is Suneet's present salary ?

   (a) ₹ 17,000

   (b) ₹ 20,000

   (c) ₹ 25,500

   (d) ₹ 34,000

2. The price of scooter and moped are in the ratio 7 : 9. The price of moped is ₹ 16000 more than that of scooter. Then the price of moped is:

   (a) ₹ 72000

   (b) ₹ 56000

   (c) ₹ 80000

   (d) ₹ 70000

3. $\frac{1}{2}\log_{10}25-2\log_{10}3+\log_{10}18=$

   (a) 18

   (b) 1

   (c) $\log_{10}3$

   (d) noner of these

4. $\frac{1}{\log_{xy}xyz}+\frac{1}{\log_{yz}xyz}+\frac{1}{\log_{zx}xyz}=$

   (a) log xyz

(b) 1

(c) 0

(d) 2

5. Roots of the equation $x^3+9x^2 – x – 9 = 0$.

(a) 1, 2, 3

(b) 1, - 1, - 9

(c) 2, 3, - 9

(d) 1, 3, 9

6. if $\alpha + \beta = -2$ and $\alpha . \beta = -3$ then α and β are the roots of the equation , which is

(a) $x^2-2x-3= 0$

(b) $x^2+2x-3= 0$

(c) $x^2+2x+3= 0$

(d) $x^2-2x+3= 0$

7. $U^{5x} = V^{5y} = W^{5z}$ and $U^2 = vw$, then the value of $xy+xz-2yz$ will be :

(a) 5

(b) 2

(c) 1

(d) 0

8. Find the value of k in $3x^2 – 2kx + 5 = 0$, if $x = 2$.

(a) 17/4

(b) -7/14

(c) 4/17

(d) -4/17

9. The difference between the roots of the equation $x^2-7x-9= 0$ is

(a) 7

(b) $\sqrt{85}$

(c) 9

(d) $2\sqrt{85}$

10. The solution of the Inequality 8x+6<12x+4 is :

(a) (-2, 2)

(b) (0,-2)

(c) $(-\frac{1}{2},\infty)$

(d) $(\frac{1}{2},\infty)$

11. On solving the inequalities $2x + 5y \leq 20, 3x + 2y \leq 12$, $x \leq 0$, $y \leq 0$, we get the following situation

(a) (0, 0), (0, 4), (4, 0) and (20/11, 36/11)

(b) (0, 0), (10, 0), (0, 6) and (20/11,36/11)

(c) (0, 0), (0, 4), (4, 0) and (2, 3)

(d) (0, 0), (10, 0), (0, 6) and (2, 3)

12. Find the effective rate of interest on ₹ 10,000 on which interest is payable half yearly at 5% p.a.

(a) 5.06%

(b) 4%

(c) 0.4%

(d) 3%

13. Find the effective rate of interest at 10% p.a. when interest is payable quarterly.

(a) 10.38%

(b) 5%

(c) 5.04%

(d) 4%

14. What will be the population after 3 years when present population is 1,25,000 and population increases at the rate of 3% in 1st year, at 4% in 2nd year and at 5% in 3rd year?

(a) 1,28,589

(b) 1,40,595

(c) 1,27,000

(d) 1,30,000

15. The value of scooter is ₹ 100,000. Find its value after 7 years if rate of depreciation is 10% p.a.

(a) ₹ 40000

(b) ₹ 47830

(c) ₹ 42,079

(d) ₹ 42,000

16. SI = 0.125 P at 10% p.a. Find Time.

(a) 1 year 3 months

(b) 25 years

(c) 0.25 years

(d) 1 year 6 months

17. How much amount is required to be invested every year as to accumulate ₹ 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest [Given : $(1:1)^{10} = 2.59374$].

(a) ₹ 37,000

(b) ₹ 37,200

(c) ₹ 37,647

(d) ₹ 38,000

18. The difference between the CI and SI for 2 year is 21. If the rate of interest is 5%, the final principal is:

(a) ₹ 8,200

(b) ₹ 4,800

(c) ₹ 8,000

(d) ₹ 8,400

19. Present value of a scooter is ₹ 72,000. If its value decreases every year by 10%, then its value before 3 years is equal to:

(a) 98,765

(b) 90,000

(c) 85,000

(d) 80, 000

20. Mr. X lent some amount of money at 4% S.I. and he obtained ₹ 520 less than he lent in 5 years. The sum lent is

(a) ₹ 620

(b) ₹ 650

(c) ₹ 750

(d) ₹ 2,600

21. ₹ 8,829 is invested into three different sectors in such a way that their amounts at 4% p.a. S.I. after 5 years; 6 and 8 years are equal. Find each part of the sum.

(a) ₹ 3,069, ₹ 2,970; ₹ 2,790

(b) ₹ 3,089, ₹ 2,970; ₹ 2,790

(c) ₹ 3,609, ₹ 2,970; ₹ 2,790

(d) ₹ 3,069, ₹ 2,960; ₹ 2,760

22. A ₹ 1000 bond paying annual dividends at 8.5% will be redeemed at par at the end of 10 years. Find the purchase price of this bond if the investor wishes a yield rate of 8%

(a) ₹ 907.135

(b) ₹ 1033.55

(c) ₹ 945.67

(d) None of these

23. Mr. X invest ₹ 10,000 every year starting from today for next: 10 years suppose interest rate is 8% per annual compounded annually. Calculate future value of the annuity.

(a) ₹ 1,56,454.88

(b) ₹ 1,56,000.00

(c) ₹ 1,44,865.625

(d) None of these

24. Three girls and five boys are to be seated in a row so that no two girls sit together. Total No. of arrangements are:

(a) 14,400

(b) 120

(c) 5P3

(d) $3! \times 5!$

25. A garden having 6 tall trees in a row. In how many ways 5 children stand, one in a gap between the trees in order to pose for a photograph?

(a) 24

(b) 120

(c) 720

(d) 30

26. In how many ways can 4 people be selected at random from 6 boys and 4 girls if there are exactly two girls?

(a) 90

(b) 360

(c) 92

(d) 480

27. Find the number of arrangements in which the letters of the word 'MONDAY' be arranged so that the words thus formed begin with 'M' and do not end with 'N'.

(a) 720

(b) 120

(c) 96

(d) None

28. A sum of Money doubles itself at compound interest in 10years. In how many years will it become eight times

(a) 10

(b) 30

(c) 40

(d) 35

29. If the sum of n terms of an A.P be $2n^2 + 5n$, then its 'nth' term is:

(a) 4n – 2

(b) 3n – 4

(c) 4n + 3

(d) 3n + 4

30. Sum of x terms of two AP's are in the ratio $(3x + 5) : (5x + 3)$ then ratio of their 10^{th} term is

(a) 31 : 49

(b) 30 : 49

(c) 28 : 49

(d) None of these

31. The sum of the first eight terms of a G.P. is five times the sum of the first four terms; then the common ratio is –

(a) $\sqrt{2}$

(b) $-\sqrt{2}$

(c) $\pm\sqrt{2}$

(d) None of these

32. If the pth term of an A.P. is 'q' and the qth term is 'p', then its rth term is:

(a) p + q + r

(b) p + q – r

(c) p – q – r

(d) p + q

33. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then (A – C) × B is:

(a) {(2, 2)(2, 4)(4, 2)(4, 4)(5, 2) (5, 4)}

(b) {(1, 2) (1, 4) (3, 2) (3, 4) (5, 2) (5, 4)}

(c) {(2, 2) (4, 2) (4, 4) (4, 5)}

(d) {(2, 2) (2, 4) (4, 2) (4, 4)}

34. Let A = {1,2, 3}, then the relation R = {(1,1), (2, 3), (2, 2), (3, 3), (1,2)} is:

(a) Symmetric

(b) Transitive

(c) Reflexive

(d) Equivalence

35. Let R is the set of real numbers, such that the function f: R → R and g : R → R are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x – 3$. Find (fog) :

(a) $4x^2 + 6x + 1$

(b) $x^2 + 6x + 1$

(c) $4x^2 – 6x + 1$

(d) $x^2 – 6x + 1$.

36. Find the positive value of k for which the equations: $x^2 + kx + 64 = 0$ and $x^2 – 8x + k = 0$ will have real roots:

(a) 12

(b) 16

(c) 18

(d) 22

37. If x = c t, y = c/t, then dy/dx is equal to :

(a) 1/t

(b) $t.e^t$

(c) $-1/t^2$

(d) None of these

38. Find the gradient of curve $y = 3x^2-5x+4$ at the point (1, 2)

(a) 1

(b) 3

(c) 4

(d) 5

39. If $f'(x) = 3x^2 + 2$ & f(0) = 0 then find f(2).

(a) 8

(b) 10

(c) 12

(d) none of these

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

(a) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(720)} + c$

(b) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)} + c$

(c) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(180)} + c$

(d) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(90)} + c$

41. If HEALTH is written as GSKZDG, then how will NORTH be written in that code ?

(a) OPSUI

(b) GSQNM

(c) FRPML

(d) IUSPO

42. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code ?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

43. Find odd man out of the following:

(a) 15

(b) 25

(c) 37

(d) 49

44. In the following series, which number will replace the question mark:

23, 29, 31, 37, 41, 43, ?

(a) 45

(b) 53

(c) 47

(d) 49

45. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?

(a) 2

(b) 4

(c) 5

(d) 6

46. Sangeeta leaves from her home. She first walk 30 metres in North-West direction, and then 30m in South West direction, next she walks 30 metres in South-East direction. Finally she turns towards her house. In which direction is she moving?

(a) North-West

(b) North-East

(c) South-East

(d) South-West

47. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?

(a) South

(b) South-West

(c) North-East

(d) North-West

48. Varun faces towards north. Turning to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally he turns to the right and moves 40 metres. In which direction is he now from his starting point ?

(a) South-East

(b) South-West

(c) South

(d) North-West

49. Pankaj is facing west. He turns 45° in the clockwise direction and then again another turns with 180° in the same direction i.e. clockwise direction, after that he turns 270° in the anticlockwise direction. Which direction is he facing now ?

(a) North-West

(b) West

(c) South-West

(d) South

50. A man is facing north. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 45 degree in the anticlockwise direction. Find which direction he is facing now?

(a) North

(b) East

(c) West

(d) South

51. In a straight line there are six persons sitting in a row. B is between F and D. E is between A and C. A does not stand next to F or D, C does not stand next to D. F is between which of the following persons?

(a) B and E

(b) B and C

(c) B and D

(d) B and A

52. Eight leaders P, Q, R, S, T, U, V and W are sitting on a bench facing towards North.

(i) T is fourth to the left of P

(ii) S is fourth to the right of W

(iii) U and R are not sitting at the ends, but they are neighbours of T and Q respectively.

(iv) P is next to the right of W and but left of Q.

Who are sitting at the extreme ends ?

(a) T and S

(b) P and Q

(c) U and R

(d) None

53. There are four children P, Q, R, S sitting in a row. P occupies seat next to Q but not next to R. If R is not sitting next to S? Who is occupying seat next to adjacent to S.

(a) Q

(b) P

(c) P and Q

(d) None of these

54. Five boys A, B, C, D and E are sitting in a row. A is to the right of B, and E is to the left of B but to the right of C. A is to the left of D. Who is second from the left end ?

(a) D

(b) A

(c) E

(d) B

55. Five persons are standing in a line. One of the two persons at the extreme ends is a professor and the other a businessman. An advocate is standing to the right of a student. An author is to the left of the businessman. The student is standing between the professor and the advocate. Counting from the left, the advocate is at which place ?

(a) 1st

(b) 2nd

(c) 3rd

(d) 5th

56. Pointing to a photograph, a man said “His mother husband ’ s sister is my aunt”. Then what is relation between a man and he ?

(a) Son

(b) Uncle

(c) Nephew

(d) Brother

57. If P + Q means P is the mother of Q. P x Q means P is the father of Q. P – Q means P is the sister of Q. Then which of the following relationship shows B is Aunt of A?

(a) B - D x A

(b) B - D x C + A

(c) A - D x B

(d) B - D - A

58. Ram and Mohan are brothers, Shankar is Mohan's father. Chhaya is Shankar's sister. Priya is Shankar's niece. Shubhra is Chhaya's grand daughter. Then Ram is Shubhra's .....

(a) Brother

(b) Uncle

(c) Cousin

(d) Nephew

59. Pointing to a man in a photograph, a woman said, "the father of his brother is the only son of my grandfather", how is the woman related to the man in the photograph?

(a) Mother

(b) Aunty

(c) Daughter

(d) Sister

60. Suresh introduce a man as "he is the son of the woman who is the mother of the husband of my mother". How is Suresh is related to the man?

(a) Brother-in-law

(b) Son

(c) Brother

(d) Nephew

61. The number of times a particular items occurs in a class interval is called its:

(a) Mean

(b) Cumulative Frequency

(c) Frequency

(d) None of the above

62. An Ogive is a graphical representation of:

(a) Cumulative Frequency distribution

(b) Ungrouped Data

(c) A frequency distribution

(d) None of the above

63. From the following data, cumulative frequency for the class 20 – 30 is

Class	Frequency
0 – 10	4
10 – 20	6
20 – 30	20
30 – 40	8
40 – 50	3

(a) 26

(b) 10

(c) 41

(d) 30

64. In tabulation, source of data, if any is shown in the :

(a) Stub

(b) Body

(c) Caption

(d) Footnote

65. From the following data find the number of class intervals if class length is given as 5.
73, 72, 65, 41, 54, 80, 50, 46, 49, 53

(a) 6

(b) 5

(c) 7

(d) 8

66. Find Q_1 for the following observations: 7,9,5,4,10,15,14,18,6,20

(a) 4.75

(b) 5.25

(c) 5.75

(d) 6.25

67. Histogram is useful to determine graphically the value of:

(a) Arithmetic Mean

(b) Mode

(c) Median

(d) None of these

68. Data are said to be _____ if the investigator himself is responsible for the collection of data.

(a) Primary Data

(b) Secondary Data

(c) Mixed of Primary and Secondary Data

(d) None of these

69. A suitable graph for representing the portioning of total into sub parts in statistics is:

(a) A Pictograph

(b) A Pie Chart

(c) An Ogive

(d) A Histogram

70. The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is:

(a) 11

(b) 6

(c) 5

(d) 9

71. In a moderately skewed distribution the values of mean and median are 12 and 8 respectively. The value of mode is:

(a) 0

(b) 12

(c) 15

(d) 30

72. Which of the following is positional average?

(a) Median

(b) GM

(c) HM

(d) AM

73. For a symmetric distribution:

(a) Mean = Median = Mode

(b) Mode = 3 Median – 2 Mean

(c) Mode = 1/3 Median = 1/2 Mean

(d) None

74. For the distribution

x	f
1	6
2	9
3	10
4	14
5	12
6	8

The value of median is:

(a) 3.5

(b) 3

(c) 4

(d) 5

75. The QD of six numbers 15, 8, 36, 40, 38, 41 is equal to:

(a) 12.5

(b) 25

(c) 13.5

(d) 37

76. SD of first five consecutive natural numbers is:

(a) $\sqrt{10}$

(b) $\sqrt{8}$

(c) $\sqrt{3}$

(d) $\sqrt{2}$

77. If the profit of a company remain same for the last 10 months then the SD of profit of the company would be:

(a) Positive

(b) Negative

(c) Zero

(d) either (a) or (c)

78. Coefficient of Quartile Deviation is 1/4 then Q_3/Q_1 =?

(a) 5/3

(b) 4/3

(c) 3/4

(d) 3/5

79. The sum of mean and SD of a series is a + b, if we add 2 to each observation of the series then the sum of mean and SD is :

(a) a + b + 2

(b) 6 – a + b

(c) 4 + a – b

(d) a + b + 4

80. The overall percentage of failure in a certain examination is 0.30. What is the probability that out of a group of 6 candidates at least 4 passed the examination?

(a) 0.74

(b) 0.71

(c) 0.59

(d) 0.67

81. In a certain manufacturing process, 5% of the tools produced turn out to be defective. Find the probability that in a sample of 40 tools, at most 2 will be defective: [Given: $e^{-2} = 0.135$]

(a) 0.555

(b) 0.932

(c) 0.785

(d) 0.675

82. What is the mean of X having the following density function? $f(x) = \frac{1}{\sqrt[4]{2\pi}} e^{\frac{(x-10)^2}{32}}$ for $-\infty < x < \infty$

(a) 4

(b) 10

(c) 40

(d) None of these

83. If mean and variance are 5 and 3 respectively then relation between p and q is :

(a) p > q

(b) p < q

(c) p = q

(d) p is symmetric

84. In a Poisson distribution if P(x=4) = P(x= 5) then the parameter of Poisson distribution is:

(a) $\frac{4}{5}$

(b) $\frac{5}{4}$

(c) 4

(d) 5

85. Two events A and B are such that they do not occur simultaneously then they are called _____ events.

(a) Mutually exhaustive

(b) Mutually Exclusive

(c) Mutually Independent

(d) Equally Likely

86. If a coin is tossed 5 times then the probability of getting Tail and Head occurs alternatively is:

(a) $\frac{1}{8}$

(b) $\frac{1}{16}$

(c) $\frac{1}{32}$

(d) $\frac{1}{64}$

87. When 2 dice are thrown simultaneously then the probability of getting at least one 5 is:

(a) $\frac{11}{36}$

(b) $\frac{5}{36}$

(c) $\frac{8}{15}$

(d) $\frac{1}{7}$

88. The probability that a leap year has 53 Wednesday is:

(a) $\frac{2}{7}$

(b) $\frac{3}{5}$

(c) $\frac{1}{7}$

(d) $\frac{2}{3}$

89. Ram is known to hit a target in 2 out of 3 shots whereas Shyam is known to hit the same target in 5 out of 11 shots. What is the probability that the target would be hit if they both try?

(a) $\frac{9}{11}$

(b) $\frac{6}{11}$

(c) $\frac{10}{33}$

(d) $\frac{3}{11}$

90. In a box carrying one dozen of oranges, one third has become bad. If 3 oranges are taken out from the box at random, what is the probability that at least one orange out of the three oranges picked up is good?

(a) $\frac{54}{55}$

(b) $\frac{1}{55}$

(c) $\frac{45}{50}$

(d) None of these

91. For a (m×n) classification of bivariate data, the maximum number of conditional distributions is

(a) p

(b) p+q

(c) pq

(d) p

92. If two variables x and y are related by 2X + 3Y – 7 = 0 and the mean and mean deviation about mean of X are 1 and 0.3 respectively, then the co-efficient of mean deviation of Y about mean is .

(a) -5

(b) 4

(c) 12

(d) 50

93. Correlation Co-efficient is _____ of the units of measurements

(a) Independent

(b) Dependent

(c) Both

(d) none of these

94. The coefficient of rank correlation of marks obtained by 10 students in English and Economics was found to be 0.5, it was later discovered that the difference in ranks in the two subjects obtained by one student was wrongly taken as 3 instead of 7. Find correct coefficient of rank correlation.

(a) 0.514

(b) 0.364

(c) 0.15

(d) 0.260

95. The prices and quantities of 3 commodities in base and current years are as follows:

P_0	P_1	Q_0	Q_1
12	14	10	20
10	8	20	30
8	10	30	10

The Laspyre's Price Index Number is:

(a) 118.13

(b) 107.14

(c) 120.10

(d) None of these

96. The cost of living index number in year 2015 and 2018 were 97.5 and 115 respectively. The salary of a worker in 2015 was 19500. How much additional salary was required for him in 2018 to maintain the same standard of living as in 2015?

(a) 3000

(b) 4000

(c) 3500

(d) 4500

97. Fisher's method for construction of Index Numbers uses_____

(a) Geometric Mean

(b) Harmonic Mean.

(c) Median

(d) HM

98. Consumer price index is commonly known as

(a) Chain Based index

(b) Ideal index

(c) Wholesale price index

(d) Cost of living index.

99. Circular Test is satisfied by :

(a) Paasche's Index Number

(b) The simple geometric mean of price relatives and the weighted aggregative with fixed weights

(c) Laspeyre's Index Number

(d) None of these

100. The consumer price index in 1990 increases by 80- per cent as compared to the base 1980. A person in 1980 getting ₹ 60,000 per annum should now get

(a) ₹ 1,08,000 per annum

(b) ₹ 82,000 per annum

(c) ₹ 64,000 per annum

(d) None of these

Mock Test Paper - Series I: April 2026

Date of Paper: 18th April 2026

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

FOUNDATION COURSE

PAPER – 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. If $(4)^3 \times \left(\sqrt{2^n}\right) = 2^n$, then n is

   (a) 10

   (b) 12

   (c) 13

   (d) 14

2. The values of x for the equation $x^2 + 9x + 18 = 6 - 4x$ are

   (a) (1, 12)

   (b) (–1, –12)

   (c) (1, –12)

   (d) (–1,12)

3. The solution of the equation (p+2) (p–3) + (p+3) (p–4) = p (2p–5) is

   (a) 6

   (b) 7

   (c) 5

   (d) None of these

4. The denominator of a fraction exceeds the numerator by 7 and if the 2 is added to the denominator, then the fraction becomes $\frac{3}{4}$. Find the original common fraction.

   (a) $\frac{15}{22}$

   (b) $\frac{7}{14}$

(c) $\frac{9}{16}$

(d) $\frac{11}{18}$

5. The value of $\sqrt{6+\sqrt{6+\sqrt{6+.....\infty}}}$ is

(a) -3

(b) 2

(c) 3

(d) 4

6. $\log\frac{p^2}{qr}+\log\frac{q^2}{pr}+\log\frac{r^2}{pq}=$

(a) pqr

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

(c) 1

(d) 0

6. A bag contained 25 paise, 10 paise and 5 paise are in the ratio 3:2:1. The total value of ₹ 40, the number of 5 paise coins is

(a) 45

(b) 48

(c) 40

(d) 20

8. If $2^x \times 3^y \times 5^z = 720$ then the value of x, y, z?

(a) 4, 2, 1

(b) 1, 2, 4

(c) 2, 4, 1

(d) 1, 4, 2

9. A man wants to cut three lengths from a single piece of board of length 91 cm. The Second length is to be 3 cm longer than the shortest and third length is to be twice as the shortest. What is the possible length for the shortest piece?

(a) 18

(b) 20

(c) 15

(d) 22

10. A labour can be paid under two methods of given below:

(i) ₹ 600 fixed and ₹ 50 per hour

(ii) ₹ 170 per hour

If a labour job work takes 'r' hours to complete, find out the value of r for which the method (ii) gives the labour gets the better wages.

(a) x = 6

(b) x = 4

(c) x =3

(d) x =2

11. The time required to produce a unit of product A is 3 hours and that for product B is 5 hours. The total available time is 220 hours. If x and y are the number of units of A and B that are produced then

(a) $3x+2y =220$

(b) $3x+5y\geq220$, $x\geq0$, $y\geq0$

(c) $3x+5y\leq220$, $x\geq0$, $y\geq0$

(d) $5x+2y\geq220$, $x\geq0$, $y\geq0$

12. What must be added to each term of the ratio 49:68. So that it becomes 3:4?

(a) 3

(b) 5

(c) 8

(d) 9

13. Find future value of annuity of ₹ 1000 made annually for seven years at interest rate 16% compounded annually. [Given that $(1.16)^7 = 2.8262$]

    (a) ₹ 11413.75

    (b) ₹ 11000.35

    (c) ₹ 8756

    (d) ₹ 9892.34

14. Assuming that the discount rate is 7% is p.a. How much would you pay to receive ₹ 500. Growing at 5% annually forever?

    (a) ₹ 2,500

    (b) ₹ 5,000

    (c) ₹ 7,500

    (d) ₹ 25,000

15. Rajesh deposits ₹ 3,000 at the start of each quarter in his savings account. If the account earns interest 5.75% per annum compounded quarterly, how much money (in ₹) while he has at the end of 4 years? [Given that $(1.014375)^{16} = 1.25654$]

    (a) ₹ 54,308.6

    (b) ₹ 58,553.6

    (c) ₹ 68,353.6

    (d) ₹ 63,624.4

16. The annual rate of simple interest is 12.5%. In how many years does principal doubles?

    (a) 11 years

    (b) 9 years

    (c) 8 years

    (d) 7 years

17. ₹ 5000 is paid every year for 10 years to pay off a loan. What is the loan amount of interest rate be 14% p.a. compounded annually?

    (a) ₹ 26,000.90

    (b) ₹ 26080.55

    (c) ₹ 15000.21

(d) ₹ 16,345.11

18. ₹ 800 is invested at the end of each month in account paying interest 6% per year compounded monthly. What is the future value of annuity after 10^{th} payment? [Given that $(1.005)^{10} = 1.0511$]

(a) ₹ 4444

(b) ₹ 8766

(c) ₹ 3491

(d) ₹ 8176

19. Certain sum of money borrowed at simple interest to ₹ 2688 in three years and to ₹ 2784 in four years at the rate per annum equal to

(a) 4%

(b) 6%

(c) 5%

(d) 7%

20. Ravi made of an investment of ₹ 15,000 in a scheme and at the time of maturity the time of maturity the amount was ₹ 25,000. If Compound 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

21. Madhu takes a loan of ₹ 50,000 from ABC Bank LTD. The rate of interest is 10% per annum. The first instalment will be paid at the end of five year. Determine the amount (in ₹) of equal instalments, if Madhu wishes to repay the amount in five years.

(a) ₹ 19,510

(b) ₹ 19,430

(c) ₹ 19,310

(d) ₹ 16,630

22. Rajesh invests ₹ 20,000 per year in a stock index fund, with earns 9% per year, for the next ten years. What would be closest value of accumulated investment upon payment of the last instalment? [Given: $(1.09)^{10} = 2.36736$]

(a) ₹ 3,88,764.968

(b) ₹ 3,03,858.564

(c) ₹ 2,68,728.484

(d) ₹ 4,08,718.364

23. An investment is earning compounded interest ₹ 100 invested in the year 2 accumulated to ₹ 105 by year 4. If ₹ 500 invested in the year 5, will become ₹ _____by year 10.

(a) ₹ 364.80

(b) ₹ 564.80

(c) ₹ 464.80

(d) ₹ 664.80

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

(a) ₹ 8,000

(b) ₹ 9,000

(c) ₹ 10,000

(d) ₹ 11,000

25. The value of scooter is ₹ 1,00,000 find its depreciation is 10% p.a. Calculate total depreciation value at the end of seven years.

(a) ₹ 47829.70

(b) ₹ 47000.90

(c) ₹ 42709

(d) ₹ 42,000

26. Effective rate of interest does not depend upon

(a) Amount of Principal

(b) Amount of Interest

(c) Number of conversion periods

(d) none of these

27. The number of triangles that can be formed by choosing the vertices from a set of 12 points, Seven of which lie on the same lie on the same straight line is:

(a) 185

(b) 175

(c) 115

(d) 105

28. Five bulbs of which three are defective are to be tired in two light-points in a dark-room. In how many trails the room shall be lightened?

(a) 10

(b) 7

(c) 3

(d) none of these

29. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent?

(a) 164

(b) 174

(c) 144

(d) 154

30. How many words can be formed with the letters of the word 'ORIENTAL'. So that A and E always oocupy odd places:

(a) 540

(b) 8460

(c) 8640

(d) 8450

31. The number of ways of painting the faces of a cube by 6 different colours is

(a) 30

(b) 36

(c) 24

(d) 1

32. The sum of an AP, whose first is -4 and last term is 146 is 7171. Find the value of n

(a) 99

(b) 100

(c) 101

(d) 102

33. In a geometric progression, the second term is 12 and sixth term is 192. Find 11^{th} term.

(a) 3,072

(b) 1,536

(c) 12,288

(d) 6,144

34. The first and last terms of an arithmetic progression are 5 and 905. Sum of the terms is 45,955. The number of terms is

(a) 99

(b) 100

(c) 101

(d) 102

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

(a) $\sqrt{3}$

(b) $\sqrt{2}$

(c) 4

(d) 2

36. If the sum of n terms of an AP is $(3n^2-n)$ and its common difference is 6, then its 1^{ST} term is

(a) 3

(b) 2

(c) 4

(d) 1

37. Two finite sets have m and n elements. The total number of sub sets of first set is 56 more than the total number of subsets of the second set. The value of m and n are -

(a) 6,3

(b) 7,6

(c) 5,1

(d) 8,7

38. Evaluate $\lim_{x \to a} \frac{(x+2)^{5/3} - (a+2)^{5/3}}{x-a}$ is

(a) $5/2(a+2)^{2/3}$

(b) $5/3(a+2)^{2/3}$

(c) $5/3(a+2)^{3/2}$

(d) none of these

39. Determine f(x), given that $f'(x) = 12x^2-4x$ and $f(-3) = 17$

(a) $f(x) = 4x^3-2x^2+143$

(b) $f(x) = 6x^3-x^4+137$

(c) $f(x) = 3x^4-x^3-137$

(d) $f(x) = 4x^3-2x^2-143$

40. $\int_0^1 x.e^x dx$

(a) -1

(b) 1

(c) e^1

(d) 1/e

41. Find the missing term in each of the following series : 6, 13, 25, 51, 101,?

(a) 201

(b) 202

(c) 203

(d) 205

42. Find the missing term in each of the following series : 28, 33,31,36, 34,39, ?

(a) 48

(b) 37

(c) 54

(d) 62

43. In a certain code, TEACHER is written as VGCEJGT, How is CHILDREN written in that code?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

44. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?

(a) 2

(b) 4

(c) 5

(d) 6

45. If SUMMER is coded as RUNNER, the code for WINTER will be

(a) SUITER

(b) VIOUER

(c) WALKER

(d) SUFFER

46. From home Neha goes towards North for her college and then she turns left and then turns right, and finally she turns left and reaches college. In which direction her college is situated with respect to her home?

(a) South-West

(b) North-East

(c) North-West

(d) South-East

47. Y is to the East of X, which is to the North of Z. If P is to the South of Z, then P is in which direction with respect to Y.

(a) North

(b) South

(c) Soth-East

(d) South-West

48. Five villages P, Q, R, S, and T are situated close to each other. P is to the west of Q, R is to the south of P. T is to the north of Q and S is to the east of T. Then, R is in which direction with respect to S?

(a) North-West

(b) South-East

(c) South-West

(d) Data inadequate

49. If South-West becomes North, then what will North-East be?

(a) North

(b) South-East

(c) South

(d) East

50. In a clock at 12 : 30, hour needle is in North direction while minute needle is in South direction. In which direction would be minute needle at 12:45?

(a) North-West

(b) South-East

(c) West

(d) East

51. Five students are standing in a circle. Abhinav is between Alok and Ankur. Apurva is on the left of Abhishek. Alok is on the left of Apurva. Who is sitting next to Abhinav on his right?

(a) Apurva

(b) Ankur

(c) Abhishek

(d) Alok

Directions (Questions 52-54) Study the following information carefully and answer the questions given below.

Six friends A, B, C, D, E and F are sitting in a row facing towards North. C is sitting between A and E. D is not at the end. B is sitting at immediate right of E. F is not at the right end but D is sitting at 3rd left of E.

52. How many persons are there to the right of D?

(a) One

(b) Two

(c) Three

(d) Four

53. Which of the following is sitting to the left of D?

(a) F

(b) C

(c) E

(d) A

54. Who is at the immediate left of C?

(a) A

(b) E

(c) Either E or A

(d) Cannot be determined

55. Five persons are sitting on a bench to be photographed, S is to the left of N and to the right of B. M is to the right of N. R is between N and M. Who is sitting immediate right to R.

(a) B

(b) N

(c) M

(d) S

56. B is the brother of A whose only sister is mother of C, D is maternal grandmother of C How is A related to D?

(a) Aunt

(b) Daughter-in-law

(c) Daughter

(d) Nephew

57. If X+Y means X is the mother of Y; X-Y means X is the brother of Y; X%Y means X is the father of Y and X×Y means X is the sister of Y, Which of the following shows that A is the maternal uncle of B?

(a) B+D×C-A

(b) B-D%A

(c) A-C+D×B

(d) A+C×D-B

58. C is sister of B. D is father of A. A is brother of B. D and E are married couple. How is C related to E?

(a) Daughter

(b) Son

(c) Mother

(d) Father

59. 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

60. Pointing to a photograph. Bajpai said, "He is the son of the only daughter of the father of my brother." How Bajpai is related to the man in the photograph?

(a) Nephew

(b) Brother

(c) Father

(d) Maternal Uncle

61. Which sampling technique is most appropriate when a person wants to ensure that subgroups are proportionally represented?

(a) Stratified Sampling

(b) Simple Random Sampling

(c) Multistage Sampling

(d) Systematic Sampling

62. Non-probability Sampling is also known as:

(a) Stratified Sampling

(b) Simple Random Sampling

(c) Purposive or Judgment Sampling.

(d) Cluster Sampling

63. The number of possible samples of size n out of N population units without replacement is

(a) NCn

(b) (N)n

(c) N^2

(d) n !

64. Finite population correction is

(a) $\sqrt{\frac{(N-n)}{(N-1)}}$

(b) $\sqrt{\frac{(N-1)}{(N-n)}}$

(c) $\sqrt{\frac{(N-n)}{(n-1)}}$

(d) none of these

65. In a group of persons, average weight is 60 kg. If the average of males and females taken separately is 80 kg and 50 kg respectively, find the ratio of the number of males to that of females.

(a) 2:3

(b) 3:2

(c) 2:1

(d) 1:2

66. A train covered the first 5 km of its journey at a speed of 30km/hr and next 15 km at a speed of 45 km/hr. The average speed of the train was:

(a) 38 km/hr

(b) 40 km/hr

(c) 36 km/hr

(d) 42 km/hr

67. If $2x + 3y + 4 = 0$ and $v(x) = 6$ then $v(y)$ is:

(a) 8/3

(b) 9

(c) -9

(d) 6

68. If the standard deviation of 1, 2, 3, 4, ... 10 is σ, then the standard deviation of 11, 12, 13, 14, ..., 20 is:

(a) 10σ

(b) $10+\sigma$

(c) σ

(d) None of these

69. What is the standard deviation of the following series :

Measurements:	0-10	10-20	20-30	30-40
Frequency:	1	3	4	2

(a) 81

(b) 7.6

(c) 9

(d) 2.26

70. If the difference between Mean and Mode is 69, then the difference between Mean and Median will be _____:

(a) 63

(b) 31.5

(c) 23

(d) None of these

71. If all observations in a distribution are increased by 6, then the variance of the series will be _____

(a) Increased

(b) Decreased

(c) Unchanged

(d) None of these.

72. Which measure of dispersion is base on the absolute deviation only?

(a) Range

(b) Standard Deviation

(c) Mean Devaition

(d) Quartile Devation

73. Calculate the value of 3^{rd} quartile from the following data 40, 35, 51, 21, 25, 16, 29, 27, 32

(a) 36.25

(b) 30.25

(c) 25

(d) 35

74. The mean of 100 students was 45. Later on, it was discovered that the marks of two students were misread as 85 and 54 instead of 58 and 45. Find correct mean.

(a) 68

(b) 36

(c) 44.64

(d) 52

75. The arithmetic mean and coefficient of variation of data set x are respectively, 10 and 30. The variance of 30-2x is

(a) 28

(b) 32

(c) 34

(d) 36

76. The approximate ratio of SD, MD, QD is

(a) 2:3:4

(b) 3:4:5

(c) 15:12:10

(d) 5:6:7

77. The geometric mean of three numbers 40, 50 and x is 10, the value of x is

(a) 5

(b) 4

(c) 2

(d) ½

78. Difference between upper limit and lower limit of class is known as

(a) Range

(b) Class Mark

(c) Class Size

(d) Class Boundary

79. If $P(A) = \frac{1}{3}, P(B) = \frac{1}{2}$ and $P(AUB) = \frac{5}{6}$, then events A and B are

(a) independent

(b) independent and mutually exclusive

(c) mutually exclusive

(d) none of these

80. A and B two events such that P(AUB) = $\frac{3}{4}, P(A \cap B) = \frac{1}{4}$ and $(P\left(\overline{A}\right) = \frac{2}{3}$, then $P(\overline{A} \cap B)$ is equal to

(a) $\frac{3}{8}$

(b) $\frac{5}{8}$

(c) $\frac{5}{12}$

(d) $\frac{1}{4}$

81. Five persons A, B, C, D and E are standing in a queue of a ration shop. The probability A and B are always together -

(a) $\frac{1}{4}$

(b) $\frac{2}{3}$

(c) $\frac{2}{5}$

(d) $\frac{3}{5}$

82. A card is drawn from a pack of playing cards and then another card is drawn without the first being replaced. What is the probability of getting two kings:

(a) 7/52

(b) 1/221

(c) 3/221

(d) none of these.

83. The probability of a man hitting the target is 1/4. If he fires 7 times, the probability of hitting the target at least twice is :

(a) $1-\left(\frac{5}{2}\right)\left(\frac{3}{4}\right)^6$

(b) $1-\frac{15}{2}\left(\frac{3}{4}\right)^6$

(c) $1-\frac{5}{6}3^5$

(d) $1-\left(\frac{3}{4}\right)^6$

84. If 5% of the electric bulbs manufactured by a company are defective, use Poisson distribution to find the probability that in a sample of 100 bulbs, 5 bulbs will be defective. [Given : $e^{-5} = 0.007$]

(a) 0.1823

(b) 0.1723

(c) 0.1623

(d) 0.1923

85. In a non- leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is:

(a) $\frac{4}{7}$

(b) $\frac{2}{7}$

(c) $\frac{3}{7}$

(d) $\frac{1}{7}$

86. Examine the validity of the following: Mean and standard deviation of a binomial distribution are 10 and 4 respective:

(a) Not valid

(b) Valid

(c) Both [a] and [b]

(d) Neither [a] nor [b]

87. For a Poisson variate X, P(x=1) =P(x=2), what is the mean of x ?

(a) 1

(b) 3/2

(c) 2

(d) 5/2

88. Thirty balls are serially numbered and placed in bag. Find chance that the first ball drawn is a multiple of 3 or 5

(a) 8/15

(b) 2/15

(c) 1/2

(d) 7/15

89. For a normal distribution, the first and third quartile are given to be 37 and 49, the mode of the distribution is.

(a) 37

(b) 49

(c) 43

(d) 45

90. The odds in favour of event A in a trail is 3:1. In a three independent trails, the probability of non-occurrence of the event A is

(a) 1/64

(b) 1/32

(c) 1/27

(d) 1/8

91. If 4y - 5x = 15 is the regression line of y on x and the coefficient of correlation between x and y is 0.75, what is the value of the regression coefficient of x on y?

(a) 0.45

(b) 0.9375

(c) 0.6

(d) none of these

92. If the regression line of y on x and of x on y are given by 2x+ 3y = -1 and 5x + 6y = -1 then the arithmetic means of x and y are given by.

(a) (1, -1)

(b) (-1,1)

(c) (-1, -1)

(d) (2,3)

93. For a P×Q bivariate frequency table, the maximum number of marginal distribution is

(a) P

(b) Q

(c) 1

(d) 2

94. The maximum value of correlation coefficient is

(a) 0

(b) 1

(c) -1

(d) none of these

95. The regression coefficients remain unchanged due to a

(a) Shift of origin

(b) Shift of scale

(c) Both (a) and (b)

(d) (a) or (b).

96. Consumer Price Index Number goes up from 100 to 200 and salary of a worker is also raised from 300 to 500, then Real Wage is

(a) 300

(b) 250

(c) 600

(d) 350

97. The Circular Test is known as:

(a) $P_{01} \times P_{12} \times P_{20} = 1$

(b) $P_{12} \times P_{01} \times P_{20} = 1$

(c) $P_{20} \times P_{12} \times P_{01} = 1$

(d) $P_{02} \times P_{21} \times P_{12} = 1$

98. In the data group Bowley's and Laspyre's index number is as follows. Bowley's index number =150, Laspyre's index number = 180 then Paasche's index number is

(a) 120

(b) 30

(c) 165

(d) None of these

99. Laspyres índex number is a weighted aggregate method by taking _____ as weights.

(a) Quantity consumed in the base year

(b) Quantity consumed in the current year

(c) Value of items consumed in base year

(d) Vlaue of items consumed in the current year

100. Find the Paasche's Index number for prices from the following

Commodity	Base year		Current year	
	Price	Commodity	Price	Commodity
A	5	25	6	30
B	3	8	4	10
C	2	10	3	8
D	10	4	3	45

(a) 151.21

(b) 165.28

(c) 157.26

(d) 160.21

Mock Test Paper - Series II: April 2026

Date of Paper: 27th April 2026

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

FOUNDATION COURSE

PAPER 3: QUANTITATIVE APTITUDE

Time: 2 Hours **Marks: 100**

1. Salries of Ravi and Suneet are in the ratio 2:3. If the salary of each is increased by ₹ 4000, the new ratio becomes 40:57 . What is Suneet's present salary ?

   (a) ₹ 17,000

   (b) ₹ 20,000

   (c) ₹ 25,500

   (d) ₹ 34,000

2. The price of scooter and moped are in the ratio 7 : 9. The price of moped is ₹ 16000 more than that of scooter. Then the price of moped is:

   (a) ₹ 72000

   (b) ₹ 56000

   (c) ₹ 80000

   (d) ₹ 70000

3. $\frac{1}{2}\log_{10}25-2\log_{10}3+\log_{10}18=$

   (a) 18

   (b) 1

   (c) $\log_{10}3$

   (d) noner of these

4. $\frac{1}{\log_{xy}xyz}+\frac{1}{\log_{yz}xyz}+\frac{1}{\log_{zx}xyz}=$

   (a) log xyz

(b) 1

(c) 0

(d) 2

5. Roots of the equation $x^3+9x^2 – x – 9 = 0$.

(a) 1, 2, 3

(b) 1, - 1, - 9

(c) 2, 3, - 9

(d) 1, 3, 9

6. if $\alpha + \beta = -2$ and $\alpha . \beta = -3$ then α and β are the roots of the equation , which is

(a) $x^2-2x-3= 0$

(b) $x^2+2x-3= 0$

(c) $x^2+2x+3= 0$

(d) $x^2-2x+3= 0$

7. $U^{5x} = V^{5y} = W^{5z}$ and $U^2 = vw$, then the value of $xy+xz-2yz$ will be :

(a) 5

(b) 2

(c) 1

(d) 0

8. Find the value of k in $3x^2 – 2kx + 5 = 0$, if $x = 2$.

(a) 17/4

(b) -7/14

(c) 4/17

(d) -4/17

9. The difference between the roots of the equation $x^2-7x-9= 0$ is

(a) 7

(b) $\sqrt{85}$

(c) 9

(d) $2\sqrt{85}$

10. The solution of the Inequality 8x+6<12x+4 is :

(a) (-2, 2)

(b) (0,-2)

(c) $(-\frac{1}{2},\infty)$

(d) $(\frac{1}{2},\infty)$

11. On solving the inequalities $2x + 5y \leq 20, 3x + 2y \leq 12$, $x \leq 0$, $y \leq 0$, we get the following situation

(a) (0, 0), (0, 4), (4, 0) and (20/11, 36/11)

(b) (0, 0), (10, 0), (0, 6) and (20/11,36/11)

(c) (0, 0), (0, 4), (4, 0) and (2, 3)

(d) (0, 0), (10, 0), (0, 6) and (2, 3)

12. Find the effective rate of interest on ₹ 10,000 on which interest is payable half yearly at 5% p.a.

(a) 5.06%

(b) 4%

(c) 0.4%

(d) 3%

13. Find the effective rate of interest at 10% p.a. when interest is payable quarterly.

(a) 10.38%

(b) 5%

(c) 5.04%

(d) 4%

14. What will be the population after 3 years when present population is 1,25,000 and population increases at the rate of 3% in 1st year, at 4% in 2nd year and at 5% in 3rd year?

(a) 1,28,589

(b) 1,40,595

(c) 1,27,000

(d) 1,30,000

15. The value of scooter is ₹ 100,000. Find its value after 7 years if rate of depreciation is 10% p.a.

(a) ₹ 40000

(b) ₹ 47830

(c) ₹ 42,079

(d) ₹ 42,000

16. SI = 0.125 P at 10% p.a. Find Time.

(a) 1 year 3 months

(b) 25 years

(c) 0.25 years

(d) 1 year 6 months

17. How much amount is required to be invested every year as to accumulate ₹ 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest [Given : $(1:1)^{10} = 2.59374$].

(a) ₹ 37,000

(b) ₹ 37,200

(c) ₹ 37,647

(d) ₹ 38,000

18. The difference between the CI and SI for 2 year is 21. If the rate of interest is 5%, the final principal is:

(a) ₹ 8,200

(b) ₹ 4,800

(c) ₹ 8,000

(d) ₹ 8,400

19. Present value of a scooter is ₹ 72,000. If its value decreases every year by 10%, then its value before 3 years is equal to:

(a) 98,765

(b) 90,000

(c) 85,000

(d) 80, 000

20. Mr. X lent some amount of money at 4% S.I. and he obtained ₹ 520 less than he lent in 5 years. The sum lent is

(a) ₹ 620

(b) ₹ 650

(c) ₹ 750

(d) ₹ 2,600

21. ₹ 8,829 is invested into three different sectors in such a way that their amounts at 4% p.a. S.I. after 5 years; 6 and 8 years are equal. Find each part of the sum.

(a) ₹ 3,069, ₹ 2,970; ₹ 2,790

(b) ₹ 3,089, ₹ 2,970; ₹ 2,790

(c) ₹ 3,609, ₹ 2,970; ₹ 2,790

(d) ₹ 3,069, ₹ 2,960; ₹ 2,760

22. A ₹ 1000 bond paying annual dividends at 8.5% will be redeemed at par at the end of 10 years. Find the purchase price of this bond if the investor wishes a yield rate of 8%

(a) ₹ 907.135

(b) ₹ 1033.55

(c) ₹ 945.67

(d) None of these

23. Mr. X invest ₹ 10,000 every year starting from today for next: 10 years suppose interest rate is 8% per annual compounded annually. Calculate future value of the annuity.

(a) ₹ 1,56,454.88

(b) ₹ 1,56,000.00

(c) ₹ 1,44,865.625

(d) None of these

24. Three girls and five boys are to be seated in a row so that no two girls sit together. Total No. of arrangements are:

(a) 14,400

(b) 120

(c) 5P3

(d) $3! \times 5!$

25. A garden having 6 tall trees in a row. In how many ways 5 children stand, one in a gap between the trees in order to pose for a photograph?

(a) 24

(b) 120

(c) 720

(d) 30

26. In how many ways can 4 people be selected at random from 6 boys and 4 girls if there are exactly two girls?

(a) 90

(b) 360

(c) 92

(d) 480

27. Find the number of arrangements in which the letters of the word 'MONDAY' be arranged so that the words thus formed begin with 'M' and do not end with 'N'.

(a) 720

(b) 120

(c) 96

(d) None

28. A sum of Money doubles itself at compound interest in 10years. In how many years will it become eight times

(a) 10

(b) 30

(c) 40

(d) 35

29. If the sum of n terms of an A.P be $2n^2 + 5n$, then its 'nth' term is:

(a) 4n – 2

(b) 3n – 4

(c) 4n + 3

(d) 3n + 4

30. Sum of x terms of two AP's are in the ratio $(3x + 5) : (5x + 3)$ then ratio of their 10^{th} term is

(a) 31 : 49

(b) 30 : 49

(c) 28 : 49

(d) None of these

31. The sum of the first eight terms of a G.P. is five times the sum of the first four terms; then the common ratio is –

(a) $\sqrt{2}$

(b) $-\sqrt{2}$

(c) $\pm\sqrt{2}$

(d) None of these

32. If the pth term of an A.P. is 'q' and the qth term is 'p', then its rth term is:

(a) p + q + r

(b) p + q – r

(c) p – q – r

(d) p + q

33. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then (A – C) × B is:

(a) {(2, 2)(2, 4)(4, 2)(4, 4)(5, 2) (5, 4)}

(b) {(1, 2) (1, 4) (3, 2) (3, 4) (5, 2) (5, 4)}

(c) {(2, 2) (4, 2) (4, 4) (4, 5)}

(d) {(2, 2) (2, 4) (4, 2) (4, 4)}

34. Let A = {1,2, 3}, then the relation R = {(1,1), (2, 3), (2, 2), (3, 3), (1,2)} is:

(a) Symmetric

(b) Transitive

(c) Reflexive

(d) Equivalence

35. Let R is the set of real numbers, such that the function f: R → R and g : R → R are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x – 3$. Find (fog) :

(a) $4x^2 + 6x + 1$

(b) $x^2 + 6x + 1$

(c) $4x^2 – 6x + 1$

(d) $x^2 – 6x + 1$.

36. Find the positive value of k for which the equations: $x^2 + kx + 64 = 0$ and $x^2 – 8x + k = 0$ will have real roots:

(a) 12

(b) 16

(c) 18

(d) 22

37. If x = c t, y = c/t, then dy/dx is equal to :

(a) 1/t

(b) $t.e^t$

(c) $-1/t^2$

(d) None of these

38. Find the gradient of curve $y = 3x^2-5x+4$ at the point (1, 2)

(a) 1

(b) 3

(c) 4

(d) 5

39. If $f'(x) = 3x^2 + 2$ & f(0) = 0 then find f(2).

(a) 8

(b) 10

(c) 12

(d) none of these

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

(a) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(720)} + c$

(b) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)} + c$

(c) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(180)} + c$

(d) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(90)} + c$

41. If HEALTH is written as GSKZDG, then how will NORTH be written in that code ?

(a) OPSUI

(b) GSQNM

(c) FRPML

(d) IUSPO

42. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code ?

(a) EJKNEGTP

(b) EGKNEITP

(c) EJKNFGTO

(d) EJKNFTGP

43. Find odd man out of the following:

(a) 15

(b) 25

(c) 37

(d) 49

44. In the following series, which number will replace the question mark:

23, 29, 31, 37, 41, 43, ?

(a) 45

(b) 53

(c) 47

(d) 49

45. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?

(a) 2

(b) 4

(c) 5

(d) 6

46. Sangeeta leaves from her home. She first walk 30 metres in North-West direction, and then 30m in South West direction, next she walks 30 metres in South-East direction. Finally she turns towards her house. In which direction is she moving?

(a) North-West

(b) North-East

(c) South-East

(d) South-West

47. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?

(a) South

(b) South-West

(c) North-East

(d) North-West

48. Varun faces towards north. Turning to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally he turns to the right and moves 40 metres. In which direction is he now from his starting point ?

(a) South-East

(b) South-West

(c) South

(d) North-West

49. Pankaj is facing west. He turns 45° in the clockwise direction and then again another turns with 180° in the same direction i.e. clockwise direction, after that he turns 270° in the anticlockwise direction. Which direction is he facing now ?

(a) North-West

(b) West

(c) South-West

(d) South

50. A man is facing north. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 45 degree in the anticlockwise direction. Find which direction he is facing now?

(a) North

(b) East

(c) West

(d) South

51. In a straight line there are six persons sitting in a row. B is between F and D. E is between A and C. A does not stand next to F or D, C does not stand next to D. F is between which of the following persons?

(a) B and E

(b) B and C

(c) B and D

(d) B and A

52. Eight leaders P, Q, R, S, T, U, V and W are sitting on a bench facing towards North.

(i) T is fourth to the left of P

(ii) S is fourth to the right of W

(iii) U and R are not sitting at the ends, but they are neighbours of T and Q respectively.

(iv) P is next to the right of W and but left of Q.

Who are sitting at the extreme ends ?

(a) T and S

(b) P and Q

(c) U and R

(d) None

53. There are four children P, Q, R, S sitting in a row. P occupies seat next to Q but not next to R. If R is not sitting next to S? Who is occupying seat next to adjacent to S.

(a) Q

(b) P

(c) P and Q

(d) None of these

54. Five boys A, B, C, D and E are sitting in a row. A is to the right of B, and E is to the left of B but to the right of C. A is to the left of D. Who is second from the left end ?

(a) D

(b) A

(c) E

(d) B

55. Five persons are standing in a line. One of the two persons at the extreme ends is a professor and the other a businessman. An advocate is standing to the right of a student. An author is to the left of the businessman. The student is standing between the professor and the advocate. Counting from the left, the advocate is at which place ?

(a) 1st

(b) 2nd

(c) 3rd

(d) 5th

56. Pointing to a photograph, a man said “His mother husband ’ s sister is my aunt”. Then what is relation between a man and he ?

(a) Son

(b) Uncle

(c) Nephew

(d) Brother

57. If P + Q means P is the mother of Q. P x Q means P is the father of Q. P – Q means P is the sister of Q. Then which of the following relationship shows B is Aunt of A?

(a) B - D x A

(b) B - D x C + A

(c) A - D x B

(d) B - D - A

58. Ram and Mohan are brothers, Shankar is Mohan's father. Chhaya is Shankar's sister. Priya is Shankar's niece. Shubhra is Chhaya's grand daughter. Then Ram is Shubhra's .....

(a) Brother

(b) Uncle

(c) Cousin

(d) Nephew

59. Pointing to a man in a photograph, a woman said, "the father of his brother is the only son of my grandfather", how is the woman related to the man in the photograph?

(a) Mother

(b) Aunty

(c) Daughter

(d) Sister

60. Suresh introduce a man as "he is the son of the woman who is the mother of the husband of my mother". How is Suresh is related to the man?

(a) Brother-in-law

(b) Son

(c) Brother

(d) Nephew

61. The number of times a particular items occurs in a class interval is called its:

(a) Mean

(b) Cumulative Frequency

(c) Frequency

(d) None of the above

62. An Ogive is a graphical representation of:

(a) Cumulative Frequency distribution

(b) Ungrouped Data

(c) A frequency distribution

(d) None of the above

63. From the following data, cumulative frequency for the class 20 – 30 is

Class	Frequency
0 – 10	4
10 – 20	6
20 – 30	20
30 – 40	8
40 – 50	3

(a) 26

(b) 10

(c) 41

(d) 30

64. In tabulation, source of data, if any is shown in the :

(a) Stub

(b) Body

(c) Caption

(d) Footnote

65. From the following data find the number of class intervals if class length is given as 5.
73, 72, 65, 41, 54, 80, 50, 46, 49, 53

(a) 6

(b) 5

(c) 7

(d) 8

66. Find Q_1 for the following observations: 7,9,5,4,10,15,14,18,6,20

(a) 4.75

(b) 5.25

(c) 5.75

(d) 6.25

67. Histogram is useful to determine graphically the value of:

(a) Arithmetic Mean

(b) Mode

(c) Median

(d) None of these

68. Data are said to be _____ if the investigator himself is responsible for the collection of data.

(a) Primary Data

(b) Secondary Data

(c) Mixed of Primary and Secondary Data

(d) None of these

69. A suitable graph for representing the portioning of total into sub parts in statistics is:

(a) A Pictograph

(b) A Pie Chart

(c) An Ogive

(d) A Histogram

70. The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is:

(a) 11

(b) 6

(c) 5

(d) 9

71. In a moderately skewed distribution the values of mean and median are 12 and 8 respectively. The value of mode is:

(a) 0

(b) 12

(c) 15

(d) 30

72. Which of the following is positional average?

(a) Median

(b) GM

(c) HM

(d) AM

73. For a symmetric distribution:

(a) Mean = Median = Mode

(b) Mode = 3 Median – 2 Mean

(c) Mode = 1/3 Median = 1/2 Mean

(d) None

74. For the distribution

x	f
1	6
2	9
3	10
4	14
5	12
6	8

The value of median is:

(a) 3.5

(b) 3

(c) 4

(d) 5

75. The QD of six numbers 15, 8, 36, 40, 38, 41 is equal to:

(a) 12.5

(b) 25

(c) 13.5

(d) 37

76. SD of first five consecutive natural numbers is:

(a) $\sqrt{10}$

(b) $\sqrt{8}$

(c) $\sqrt{3}$

(d) $\sqrt{2}$

77. If the profit of a company remain same for the last 10 months then the SD of profit of the company would be:

(a) Positive

(b) Negative

(c) Zero

(d) either (a) or (c)

78. Coefficient of Quartile Deviation is 1/4 then Q_3/Q_1 =?

(a) 5/3

(b) 4/3

(c) 3/4

(d) 3/5

79. The sum of mean and SD of a series is a + b, if we add 2 to each observation of the series then the sum of mean and SD is :

(a) a + b + 2

(b) 6 – a + b

(c) 4 + a – b

(d) a + b + 4

80. The overall percentage of failure in a certain examination is 0.30. What is the probability that out of a group of 6 candidates at least 4 passed the examination?

(a) 0.74

(b) 0.71

(c) 0.59

(d) 0.67

81. In a certain manufacturing process, 5% of the tools produced turn out to be defective. Find the probability that in a sample of 40 tools, at most 2 will be defective: [Given: $e^{-2} = 0.135$]

(a) 0.555

(b) 0.932

(c) 0.785

(d) 0.675

82. What is the mean of X having the following density function? $f(x) = \frac{1}{\sqrt[4]{2\pi}} e^{\frac{(x-10)^2}{32}}$ for $-\infty < x < \infty$

(a) 4

(b) 10

(c) 40

(d) None of these

83. If mean and variance are 5 and 3 respectively then relation between p and q is :

(a) p > q

(b) p < q

(c) p = q

(d) p is symmetric

84. In a Poisson distribution if P(x=4) = P(x= 5) then the parameter of Poisson distribution is:

(a) $\frac{4}{5}$

(b) $\frac{5}{4}$

(c) 4

(d) 5

85. Two events A and B are such that they do not occur simultaneously then they are called _____ events.

(a) Mutually exhaustive

(b) Mutually Exclusive

(c) Mutually Independent

(d) Equally Likely

86. If a coin is tossed 5 times then the probability of getting Tail and Head occurs alternatively is:

(a) $\frac{1}{8}$

(b) $\frac{1}{16}$

(c) $\frac{1}{32}$

(d) $\frac{1}{64}$

87. When 2 dice are thrown simultaneously then the probability of getting at least one 5 is:

(a) $\frac{11}{36}$

(b) $\frac{5}{36}$

(c) $\frac{8}{15}$

(d) $\frac{1}{7}$

88. The probability that a leap year has 53 Wednesday is:

(a) $\frac{2}{7}$

(b) $\frac{3}{5}$

(c) $\frac{1}{7}$

(d) $\frac{2}{3}$

89. Ram is known to hit a target in 2 out of 3 shots whereas Shyam is known to hit the same target in 5 out of 11 shots. What is the probability that the target would be hit if they both try?

(a) $\frac{9}{11}$

(b) $\frac{6}{11}$

(c) $\frac{10}{33}$

(d) $\frac{3}{11}$

90. In a box carrying one dozen of oranges, one third has become bad. If 3 oranges are taken out from the box at random, what is the probability that at least one orange out of the three oranges picked up is good?

(a) $\frac{54}{55}$

(b) $\frac{1}{55}$

(c) $\frac{45}{50}$

(d) None of these

91. For a (m×n) classification of bivariate data, the maximum number of conditional distributions is

(a) p

(b) p+q

(c) pq

(d) p

92. If two variables x and y are related by 2X + 3Y – 7 = 0 and the mean and mean deviation about mean of X are 1 and 0.3 respectively, then the co-efficient of mean deviation of Y about mean is .

(a) -5

(b) 4

(c) 12

(d) 50

93. Correlation Co-efficient is _____ of the units of measurements

(a) Independent

(b) Dependent

(c) Both

(d) none of these

94. The coefficient of rank correlation of marks obtained by 10 students in English and Economics was found to be 0.5, it was later discovered that the difference in ranks in the two subjects obtained by one student was wrongly taken as 3 instead of 7. Find correct coefficient of rank correlation.

(a) 0.514

(b) 0.364

(c) 0.15

(d) 0.260

95. The prices and quantities of 3 commodities in base and current years are as follows:

P_0	P_1	Q_0	Q_1
12	14	10	20
10	8	20	30
8	10	30	10

The Laspyre's Price Index Number is:

(a) 118.13

(b) 107.14

(c) 120.10

(d) None of these

96. The cost of living index number in year 2015 and 2018 were 97.5 and 115 respectively. The salary of a worker in 2015 was 19500. How much additional salary was required for him in 2018 to maintain the same standard of living as in 2015?

(a) 3000

(b) 4000

(c) 3500

(d) 4500

97. Fisher's method for construction of Index Numbers uses_____

(a) Geometric Mean

(b) Harmonic Mean.

(c) Median

(d) HM

98. Consumer price index is commonly known as

(a) Chain Based index

(b) Ideal index

(c) Wholesale price index

(d) Cost of living index.

99. Circular Test is satisfied by :

(a) Paasche's Index Number

(b) The simple geometric mean of price relatives and the weighted aggregative with fixed weights

(c) Laspeyre's Index Number

(d) None of these

100. The consumer price index in 1990 increases by 80- per cent as compared to the base 1980. A person in 1980 getting ₹ 60,000 per annum should now get

(a) ₹ 1,08,000 per annum

(b) ₹ 82,000 per annum

(c) ₹ 64,000 per annum

(d) None of these