CA Foundation Course **(Mock Test Paper – Series: 1)**
DATE: 10.04.2025 **MAXIMUM MARKS: 100** **TIMING: 2 Hours**

PAPER 3 : QUANTITATIVE APTITUDE

1. Show that $2^{x+y} = 4 \times 8 \times 16$, then $(x+y)^2$ is equal to:-
   (a) 16
   (b) 81
   (c) 32
   (d) 64

2. Solving $\sqrt{\frac{x}{y}}+\sqrt{\frac{y}{x}}-\frac{5}{2}=0$ and $x+y-5=0$, we get the roots as under:-
   (a) 1, 4
   (b) 1, 2
   (c) 1, 3
   (d) 1, 5

3. If $2-\sqrt{3}$ is one root of $x^2+\alpha x+\beta=0$ then α and β are:-
   (a) -4, -1
   (b) 4, -1
   (c) -4, 1
   (d) 4, 1

4. The roots of 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

5. If α and β are roots of the equation $ax^2+bx+c=0$, then the equation whose roots are $1/\alpha$ and $1/\beta$ is:-
   (a) $cx^2-bx+a=0$
   (b) $cx^2+bx+1=0$
   (c) $x^2+bx+a=0$
   (d) $cx^2+bx+a=0$

6. A fertilizer company produces two types of fertilizers called grade I and grade II. Each of these types is processed through two critical chemical plant units. Plant A has maximum of 120 hours available in a week and plant B has maximum of 180 hours available in a week. Manufacturing one bag of grade I fertilizer requires 6 hours in plant A and 4 hours in plant B. Manufacturing one bag of grade II fertilizer requires 3 hours in plant A and 10 hours in plant B. Express this using linear inequalities.
   (a) $6x + 3y \leq 120, 4x + 10y \leq 180, x, y \geq 0$
   (b) $6x + 4y \leq 120, 4x + 3y \leq 180, x, y \geq 0$
   (c) $6x + 3y \geq 120, 4x + 10y \geq 180, x, y \geq 0$
   (d) None

7. If the annual rate of simple interest increases from 10% to $12\frac{1}{2}\%$, a man's yearly income increases by Rs. 1250. His principal (in Rs.) is:-
(a) Rs. 45,000
(b) Rs. 50,000
(c) Rs. 60,000
(d) Rs. 65,000

8. A man divided his share between his sons A and B in such a way that the simple interest received by A at 15% p.a. for 3 years is double the interest received by B at 12% p.a. for 5 years. In what ratio was his share divided?
(a) 2/3
(b) 3/2
(c) 3/8
(d) 8/3

9. A person invests money in three different schemes for 6 years, 10 years and 12 years at 10%, 12% and 15% simple interest respectively. At the completion of each scheme, he gets the same interest. The ratio of his investments is:-
(a) 2:3:4
(b) 4:3:2
(c) 3:4:6
(d) 6:3:2

10. Find the present value of Rs. 10,000 to be required after 5 years if the interest rate be 9%.
(a) Rs. 38896.5
(b) Rs. 42397.18
(c) Rs. 6499.33
(d) Rs. 4699.93

11. The difference between CI and SI for 2 years is 21. If rate of interest is 5%. Find principal.
(a) Rs. 8,400
(b) Rs. 4,800
(c) Rs. 8,000
(d) Rs. 8,200

12. Given annuity of Rs. 500 amounts to Rs. 5365.35 at 14% p.a. CI. The number of approx. years will be:-
(a) 5 years
(b) 7 years
(c) 9 years
(d) 11 years

13. Assuming that the discount rate is 12% per annum, how much would you pay to get Rs. 150, growing at 4% annually forever?
(a) Rs. 1,425
(b) Rs. 1,825
(c) Rs. 1,875
(d) Rs. 1,250

14. How many arrangements can be made out of the letters of the word "Engineering", the vowels never being separated?
(a) 8400
(b) 7460
(c) 4200
(d) None

15. There are 7 men and 3 ladies. Find the number of ways in which a committee of 6 can be formed of them if the committee is to include at least two ladies?
(a) 250
(b) 300
(c) 120
(d) 140

16. If S_n the sum of first n terms in a series is given by $2n^2+3n$ the series is in _____.
(a) AP
(b) GP
(c) HP
(d) None

17. The 3rd term of a GP is 36 and 5th term is 81, then the 1st term is:-
(a) 4
(b) 16
(c) 24
(d) 9

18. If $A=\{1,2,3,4,5,7,8,9\}$ and $B=\{2,4,6,7,9\}$ then how many proper subset of A∩B can be created?
(a) 16
(b) 15
(c) 32
(d) 31

19. If $f(x)=2x+2$ and $g(x)=x^2$ then the value of fog(2) is:-
(a) 10
(b) 34
(c) 22
(d) None

20. If A = {x,y,z}, B = {p,q,r,s} which of the relation on A to B are function:-
(a) {(x,p), (x,q), (y,r), (z,s)}
(b) {(x,p), (y,q), (z,s)}
(c) {(x,p), (y,q), (z,r), (z,s)}
(d) {(p,x), (q,y), (r,z)}

21. $f(x)=\dfrac{x^2-3x+2}{x-1}, x\neq 1$ becomes continuous at x=1, then the value of f(1) is:-
(a) 1
(b) -1
(c) 0
(d) None

22. Find the equation of the curve where slope at (x,y) is 9x and which passes through the origin.

(a) $x^2 = y$

(b) $9x^2 = 2y$

(c) $x^2 = 9y$

(d) $2x^2 = 9y$

23. $\int \frac{dx}{x(x^3+1)}$

(a) $\log\left(\frac{x^3}{x^3+1}\right)$

(b) $3\log\left(\frac{x^3}{x^3+1}\right)$

(c) $\frac{1}{3}\log\left(\frac{x^3}{x^3+1}\right)$

(d) $\frac{1}{3}\log\left(\frac{1+x^3}{x^3}\right)$

24. A bag contains coins of Rs. 1, 50 paisa and 25 paisa in the ratio 4:5:6. If the total amount in the bag is Rs. 120, then the number of coins of 25 paisa, is :-

(a) 60
(b) 75
(c) 90
(d) 96

25. The mean proportion between $\frac{a-b}{a+b}$ and $\frac{a^2b^2}{a^2-b^2}$ is:-

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

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

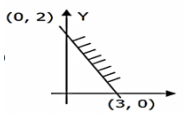
(c) $\frac{a-b}{ab}$

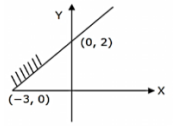
(d) $\frac{a+b}{ab}$

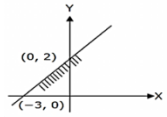
26. log $(1^3+2^3+3^3+\text{---}+n^3)$ is equal to :-

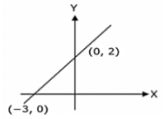
(a) 2 log n + 2 log (n+1) - 2 log 2
(b) log n + 2 log (n+1) - 2 log 2
(c) 2 log n + log (n+1) - 2 log 2
(d) None

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

(a) 

(b) 

(c) 

(d) 

28. The simple interest on a certain sum of money for $2\frac{1}{2}$ year at 12% per annum is Rs. 40 less than the simple interest on the same sum for $3\frac{1}{2}$ years at 10% per annum. Find the sum.

(a) 1,000
(b) 800
(c) 900
(d) None of these

29. A certain sum of money triples itself in 8 years with simple rate of annual interest. In how many years it will be five times of itself?

(a) 16 years
(b) 18 years
(c) 20 years
(d) None of these

30. How much amount is required to be invested every year so as to accumulate Rs. 4,00,000 at the end of 10 years, if interest is compounded annually at 10%

(a) Rs. 24506.18
(b) Rs. 25098.16
(c) Rs. 22506.18
(d) Rs. 21098.16

31. Suppose the revenues of a company for five years are:-

Year	2014	2015	2016	2017	2018
Revenues	100	120	160	210	280

Calculate compound annual growth rate.

(a) 27.74%
(b) 29.35%
(c) 25.43%
(d) 31.60%

32. The sum of digit in unit place of all 4 digit numbers, formed with the help of 3, 4, 5, 6 taken all a time is :-
(a) 432
(b) 564
(c) 108
(d) 36

33. The number of straight lines can be formed out of 10 point of which 7 are collinear
(a) 24
(b) 21
(c) 25
(d) 26

34. The sum of all odd natural numbers between 36 and 120 is:
(a) 2000
(b) 2040
(c) 3276
(d) 3726

35. If $a = 1 + \frac{1}{2} + \frac{1}{2^2} + \frac{1}{2^3} + \text{------}\infty$

$b = 1 + \frac{1}{6} + \frac{1}{6^2} + \frac{1}{6^3} + \text{------}\infty$

Then the value of ab is:-
(a) $\frac{5}{12}$
(b) $\frac{5}{6}$
(c) $\frac{12}{5}$
(d) 2

36. Value of $\int_{-1}^{1} (x^5 - 3x^3 + 2x)\, dx$
(a) 0
(b) 5
(c) -2
(d) None

37. If the rate of interests are 6%, 8% and 10% yearly for first, second and third year respectively, then the compound interest for 3 years on the amount Rs. 60,000 will be:-
(a) Rs. 19,446
(b) Rs. 15,556.80
(c) Rs. 16,602
(d) Rs. 75,556.80

38. A sum compounded annually become $\frac{25}{16}$ times of itself in 2 years, the rate of interest per annum is-
(a) 5%
(b) 12.5%
(c) 25%
(d) 50%

39. Find the Sum of money which will amount to ₹ 26,010 in 6 months at the rate of 8% per annum when the interest is compounded quarterly.
(a) ₹ 20,000
(b) ₹ 30,000
(c) ₹ 25,000
(d) ₹ 21,000

40. Which of the following statement is false?
(assume that the yearly cash flow are identical for both annuities)
(a) The present value of an annuity due is greater than the present value of an ordinary annuity.
(b) The future value of an annuity due is greater than the future value of an ordinary annuity.
(c) The present value of an annuity immediate is the same as annuity regular for (n-1) year plus the initial receipt in the beginning of the period.
(d) None of these

41. Purchasing power of money is
(a) Inversely proportional to price index number
(b) Directly proportional to price index number
(c) Both (a) and (b)
(d) None of these

42. Age of applicants for life insurance and the premium of insurance-correlation are:
(a) positive
(b) negative
(c) zero
(d) None

43. When the two curves of ogive intersect, the point of intersection provides:
(a) First Quartile
(b) Second Quartile
(c) Third Quartile
(d) Mode

44. _____is the entire upper part of the table which includes columns and sub-column and unit of measurement.
(a) Stub
(b) Box-head
(c) Body
(d) Caption

45. Which is true from the following.
(a) Q.D<M.D.<S.D
(b) Q.D>M.D>S.D
(c) Q.D<S.D<M.D
(d) Q.D>S.D>M.D

46. Which is always true for distinct observations-
(a) Standard Deviation = $\sqrt{\frac{\sum x^2}{n}}$
(b) Standard Deviation = $\sum x^2 + n^2$
(c) $\sum x^2 = n(\sigma^2 + \bar{x}^2)$
(d) $\bar{x}^2 = \sigma^2 + n^2$

47. Mean of binomial distribution = 3 and variance = 4 find the value of n-
(a) 8
(b) 9
(c) $\frac{4}{3}$
(d) Not valid

48. Two lines of regression are given by 5x+7y-22=0 and 6x+2y-22=0. If the variance of y is 15 find the standard deviation of x.
(a) 2.646
(b) 6.246
(c) 7.612
(d) 3.646

49. If the maximum and minimum values of 10 observations are 40 and 10 then coefficient of range is
(a) $\frac{5}{3}$
(b) $\frac{3}{5}$
(c) 30
(d) none of these

50. What is the G.M. for the numbers 2, 4, 8, 16, 32, 64?
(a) $2^{5/2}$
(b) $2^{7/2}$
(c) 33
(d) None

51. If 2 percent of electric bulbs manufactured by a company are known to be defectives, what is the probability that a sample of 150 electric bulbs taken from the production process of the company would contain more than two defective bulbs?
(a) 0.46
(b) 0.43
(c) 0.77
(d) 0.58

52. A, B, C, X, Y, Z are seated in a straight line facing North. C is third to the right of Z and B sits second to the right of C. X sits to the immediate right of A. How many persons are seated between A and C?
(a) One
(b) Two
(c) Three
(d) Four

53. If 'HONEY' is coded as JQPGA.
Which word is code as VCTIGVU?
(a) CARPETS
(b) TRAPETS
(c) TARGETS
(d) UMBRELU

54. Identify the single letter, which when removed from the following words form new words.
MINK, WARM, LAMP, TEAM
(a) A
(b) R
(c) M
(d) L

55. Find the odd one out.
(a) C72X
(b) E110V
(c) G140T
(d) J180P

56. A man starts from a point, walk 8 km towards North, turns right and walks 12 km, turns left and walks 7 km turns and walks 20 towards South, turns right and walks 12 km. In which direction is he from the starting point ?
(a) North
(b) South
(c) West
(d) East

Directions (Q. 57-58): Following questions are based on the information provided below:
(i) 'P x Q' means 'P is brother of Q.'
(ii) 'P ÷ Q' means 'P is sister of Q.'
(iii) 'P + Q' means 'P is mother of Q.'
(iv) 'P – Q' means 'P is father of Q.'

57. Which of the following means 'M is nephew of R' ?
(a) M x T + J ÷ R
(b) R x K – M x T
(c) R x K - M
(d) R – K ÷ M

58. Which of the following means 'D is maternal uncle of T'?
(a) D x J + T
(b) D x J - T
(c) D ÷ J + T
(d) D ÷ J – T

59. Six members of a family namely A, B, C, D, E and F are travelling together. 'B' is the son of C but C is not the mother of B. A and C are married couple. E is the brother of C, D is the daughter of A. F is the brother of B. How many male members are there in the family?
(a) 3
(b) 2
(c) 4
(d) 1

60. What will be the next term of the following series?
1, 10, 37, 118, _____
(a) 354
(b) 361
(c) 363
(d) 586

61. A main is facing west. He turns 45 degrees in the clockwise direction and then another 180 degrees in the same direction and then 270 degrees in the anticlockwise direction. Which direction is he facing now?
(a) South – West
(b) North – West
(c) West
(d) South

62. A and B start moving towards each other from two places 200 m apart. After walking 60 m, B turns left and goes 20 m, then he turns right and goes 40 m. He then turns right again and comes back to the road on which he had started walking. If A and B walk with the same speed, what is the distance between them now?
(a) 80 m
(b) 70 m
(c) 40 m
(d) 60 m

63. There are four towns P, Q, R and T. Q is to the south-west of P, R is to the east of Q and southeast of P, and T is to the north of R in line with QP. In which direction of P is T located?
(a) North
(b) North-East
(c) East
(d) South-East

64. Five friends A, B, C, D and E are staying in the same locality. B's house is to the east of A's house and to the north of C's house. C's house is to the west of D's house. D's house is in which direction with respect to A's house?
(a) North-East
(b) South-East
(c) North-West
(d) South-West

65. Pointing to a lady Ravi said, "She is the only daughter of the father of my sister's brother". How is she related to Ravi?
(a) Aunty
(b) Mother
(c) Sister
(d) None

Directions: Find odd One out of the following (66 - 67):

66. 8, 14, 26, 48, 98, 194, 386
(a) 14
(b) 48
(c) 98
(d) 194

67. In a college party, 5 girls are sitting in a row. P is to the left of M and to the right of O. R is sitting to the right of N but to the left of O. Who is sitting in the middle?
(a) O
(b) R
(c) P
(d) M

68. If covariance between two variables is 25
Variance (x) = 36
Variance (y) = 25 Find r.
(a) 0.409
(b) 0.419
(c) 0.833
(d) 0.027

69. If average of 50 person is Rs. 5850 but later on it was discovered one person salary is wrongly taken as 8000 instead of 7800 find correct mean.
(a) Rs. 5,854
(b) Rs. 5,846
(c) Rs. 5,650
(d) Rs. 2,846

70. The Sum of difference between ranks for spearmen rank correlation coefficient is-
(a) 0
(b) 1
(c) -1
(d) +2

71. Five competitors in a contest are ranked by two judges in the order 1, 2, 3, 4, 5 and 5,4,3,2,1 respectively. Calculate the Spearman's rank correlation coefficient.
(a) -0.5
(b) -1
(c) 0.5
(d) 1

72. Chronological classification is :
(a) classification of units on the basis of time
(b) classification of units on the basis of geographical area
(c) classification of units according to the characteristic of attributes
(d) classification of units according to the characteristic of variables

73. If u = 2x+5, v=–3y +1, and the regression coefficient of y on x is – 1.2, the regression coefficient of v on u is :
(a) 1.8
(b) –1.8
(c) 3.26
(d) 0.8

74. The mean of set of observation is $\bar{x}$. If each observation is divided by α , $\alpha \neq 0$ and then is increased by 10, then the mean of the new set is
(a) $\bar{x} / \alpha$
(b) $(\bar{x} + 10) / \alpha$
(c) $\frac{\bar{x}}{\alpha} + 10$
(d) $\alpha \bar{x} + 10$

75. Sum of deviation from mean for any set of observation is -
(a) Negative
(b) Positive
(c) Zero
(d) None of these

76. A person purchases 5 rupees worth of eggs from 10 different markets. You are to find the average no. of eggs per rupee for all the markets taken together. What is the suitable form of average in this case_____
(a) AM
(b) GM
(c) HM
(d) None

77. X is a random variable taking the values 5, 6 and 7 with probabilities 1/3, 1/4 and 5/12, then Find E(X).
(a) 5.14
(b) 6.08
(c) 7.12
(d) 3.29

78. If there are two groups containing 30 and 20 observations and having 50 and 60.as arithmetic means, then the combined arithmetic mean is
(a) 55
(b) 56
(c) 54
(d) 52

79. Seven friends T, U, V, W, X, Y and Z are sitting in a straight line facing north. W sits fifth to the right of T. W does not sit at any of extreme ends. Two people sit between Z and X. Y sits third to the left of U. Y sits exactly in the middle. Z is not an immediate neighbour of Y. What is Z's position with respect to W?
(a) Second to the left
(b) Third to the right
(c) Fourth to the left
(d) Third to the left

80. If P is the husband of Q and R is the mother of S and Q. What is R to P ?
(a) Mother
(b) Sister
(c) Aunt
(d) Mother-in-law

81. Cost of paper for a week under the heads raw material, labour, direct production and others were Rs. 23, Rs. 18, Rs. 32, Rs. 17 respectively. What is the difference between the central angles for the largest and smallest components of cost of the paper?
(a) 60
(b) 68
(c) 72
(d) 56

82. Eight friends – A, B, C, D, E, F, G and H are sitting around a circle facing the centre, but not necessarily in the same order. D sits third to left of A. A is an immediate neighbour of both F and H. only one person sits between C and F. B is not an immediate neighbour of D. only one person sits between B and G.

A is related to G in a certain way. Similarly, C is related to H, according to the given seating arrangement. Who among the following is related to F, following the same pattern?
(a) A
(b) B
(c) C
(d) D

83. The standard deviation calculated from a set of 32 observations is 5. If the sum of the observations is 80, what is the sum of the squares of these observations ?
(a) 10
(b) 1000
(c) 100
(d) 2000

84. Two dice with face marked 1, 2, 3, 4, 5, 6 are thrown simultaneously and the points on the dice are multiplied together. The probability that product is 12 is:
(a) 4/36
(b) 5/36
(c) 12/36
(d) None

85. The probability that A speaks truth is 4/5, while the probability for B is 3/4. The probability that they contradict each other when asked to speak on a fact is:
(a) 3/20
(b) 1/5
(c) 7/20
(d) 4/5

86. Find mean deviations about median and also the corresponding coefficient for the following points (`000 Rs.) of a firm during a week.
82, 56, 75, 70, 52, 80, 68.
(a) Rs. 8.71428, 12.45
(b) Rs. 9.25326, 15.23
(c) Rs. 8.26350, 11.36
(d) Rs. 8.52941, 13.24

87. 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 hearts?
(a) 1/17
(b) 1/4
(c) 2/17
(d) None of these

88. A bag contains 2 Red, 3 Green, and 2 Blue bails. If 2 balls are drawn at random from the bag find the Probability that none of them will be Blue.
(a) 11/21
(b) 5/7
(c) 10/21
(d) 2/7

89. An experiment succeeds twice as often as it fails. What is the probability that in next five trials there will be three success.
(a) 192/243
(b) 19/243
(c) 80/243
(d) 50/243

90. If in a binomial distribution n = 4, P(X = 0) = 16/81, then P(X = 4) is
(a) 1/16
(b) 1/81
(c) 1/27
(d) 1/8

91. The symbol $\phi(a)$ indicates the area of the standard normal curve between
(a) 0 to a
(b) a to ∞
(c) $-\infty$ To a
(d) $-\infty$ to ∞

92. The odds are 9:5 against a person who is 50 years living till he is 70 and 8:6 against a person who is 60 living till he is 80. Find the probability that at least one of them will be alive after 20 years:
(a) $\frac{11}{14}$
(b) $\frac{22}{49}$
(c) $\frac{31}{49}$
(d) $\frac{35}{49}$

93. Standard normal distribution have inflexion points:
(a) μ & σ
(b) $\mu - \sigma$ & $\mu + \sigma$
(c) – 1 & +1
(d) None of these

94. A Bag contains 6 Red and some Blue ball is probability of Blue ball is double of Red bare find the number of blue ball in Bag.
(a) 10
(b) 12
(c) 14
(d) 15

95. Fisher's Index Number = 150
Paache's Index Number = 140
Find Laspayre's Index Number
(a) 147.77
(b) 156.25
(c) 160.71
(d) 138.08

96. If a random sample of size 2 with replacement is taken from the population containing the units 3,6 and 1, then the samples would be
(a) (3,6),(3,1),(6,1)
(b) (3,3),(6,6),(1,1)
(c) (3,3),(3,6),(3,1),(6,6),(6,3),(6,1),(1,1),(1,3),(1,6)
(d) (1,1),(1,3),(1,6),(6,1),(6,2),(6,3),(6,6),(1,6),(1,1)

97. A Statistic 'T' is said to be a consistent estimator of the population Parameter ' θ ' is
(a) E(T) = θ
(b) $V(T) \to 0$ 0 as $n \to \infty$
(c) both of these
(d) None of these

98. When every member in population has an equal chance of being selection, then that sampling is called
(a) Restrictive
(b) Purposive
(c) Subjective
(d) Non-restrictive

99. Eight friends P, Q, R, S, T, U, V and W are sitting around a circle facing the centre. V is third to the right of Q and is second to the left of R. Q is second to the left of T and on the immediate right of S. U is between Q and T. P is not on the left of R.

Which of the following pairs of persons has the first person sitting on the immediate right to the second person?
(a) UT
(b) WR
(c) WT
(d) VT

100. When the product of price index and the quantity index is equal to the corresponding value index then
(a) Unit Test
(b) Time Reversal Test
(c) Factor Reversal Test
(d) none holds

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