



☒ Telegram: - <https://t.me/vsijaipur>

☒ YouTube: - <https://www.youtube.com/c/VsijaipurOfficial/>

☒ Instagram: - <https://www.instagram.com/vsijaipur/>

☒ Face book: - <https://www.facebook.com/vsijaipur/>

MATHS QUESTIONS
CA FOUNDATION PAPER DECEMBER 2022

1. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets ₹1,000 more than D, what is B's share?
 (a) 2,000 (b) 1500
 (c) 2500 (d) 1000
2. A group of 400 soldiers posted at border area had a provision for 31 days. After 28 days 280 from this group were called back. Find the number of days for which the remaining rations will be sufficient?
 (a) 3 (b) 6
 (c) 8 (d) 10
3. By simplifying $(2a^3 b^4)^6 / (4a^3 b)^2 \times (a^2 b^2)$, the answer will be
 (a) $4a^2 b^3$ (b) $4a^6 b$
 (c) $4a^{10} b^{10}$ (d) $4a^{10} b^{20}$
4. If $\log_{10} 2 = y$ and $\log_{10} 3 = x$, then the value of $\log_{10} 15$ is:
 (a) $x - y + 1$ (b) $x + y + 1$
 (c) $x - y - 1$ (d) $y - x + 1$
5. $\log_3 4 \cdot \log_4 5 \log_5 6 \cdot \log_6 7 \log_7 8 \cdot \log_8 9$ equal to
 (a) 3 (b) 2
 (c) 1 (d) 0
6. 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)
7. If the cost of 3 bags and 4 pens is ₹267 where as the cost of 4 bags and 3 pens is ₹324, then the cost of one bag is:
 (a) 8 (b) 24
 (c) 32 (d) 75
8. 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
9. If the roots of the equation $x^2 - px + q = 0$ are in the ratio 2 : 3 then
 (a) $p^2 = 25q$ (b) $P^2 = Gq$
 (c) $6p^3 = 5q$ (d) $6p^2 = 25q$
10. If $2x + 5 > 3x + 2$ and $2x - 3 < 4x - 5$, the 'x' can take which of the following value?
 (a) 4 (b) -4
 (c) 2 (d) -2

11. A farmer borrowed ₹ 3600 at the rate of 15% simple interest per Annum. At the end of 4 years, he cleared this account by paying ₹ 4000 and a cow. The cost of the cow is:
(a) ₹1000 (b) ₹1200
(c) ₹1550 (d) ₹1760
12. If ₹64 Amount to ₹ 83.20 in 2 years, what will ₹ 86 Amount to in 4 years at the same Rate percent per annum?
(a) ₹ 127.60 (b) ₹147.60
(c) ₹145.34 (d) ₹117.60
13. The effective annual rate of interest corresponding to a normal rate of 6% per annum payable half yearly is:
(a) 6.06% (b) 6.07%
(c) 6.08% (d) 6.09%
14. Mr. Prakash invested money in two schemes 'A' and 'B' offering compound interest at the rate of 8% and 9% per annum respectively. If the total amount of interest accrued through these two schemes together in two years was ₹4818.30 and total amount invested was ₹27,000. What was the amount invested in schemes 'A'?
(a) ₹ 12,000 (b) ₹12,500
(c) ₹ 13,000 (d) ₹13,500
15. A sum of money invested of compound interest double itself in four years. In how many years it become 32 times of itself at the same rate of compound interest.
(a) 12 Years (b) 16 Years
(c) 20 Years (d) 24 Years
16. A sum of money double itself in 4 years at certain compound interest rate. In how many years this sum will become 8 times at the same compound interest rate ?
(a) 12 Years (b) 14Years
(c) 16 Years (d) 18 Years
17. The difference between compound interest and simple interest on an amount of ₹15,000 for 2 years is ₹96. What is the rate of interest per Annum?
(a) 9% (b) 8%
(c) 11% (d) 10%
18. A machine worth ₹4,90,740 is depreciated at 15% on its opening value each year. When its value would reduce to ₹ 2,00,750
(a) 5 year 5 months (b) 5 year 6 months
(c) 5 years 7 months (d) 5 year 8 months
19. How much amount is required to be invested every year so as to accumulate ₹5,00,000 at the end of 12 years if interest is compounded annually at 10% {Where $A(12,0.1) = 3.1384284$ }
(a) ₹23381.65 (b) ₹24385.85
(c) ₹26381.65 (d) ₹28362.75

20. Raju invests ₹20,000 every year in a deposit scheme starting from today for next 12 years. Assuming that interest rate on this deposit is 7% per annum compounded annually.
What will be the future value of this annuity? Given that $(1+0.07)^{12} = 2.25219150$
- (a) ₹540,576 (b) ₹382,813
(c) ₹643,483 (d) ₹357,769
21. Mr. A invested ₹ 10,000 every year for next 3 years at the interest rate of 8 percent per annum compounded annually. What is future value of the annuity?
- (a) 32644 (b) 32464
(c) 34264 (d) 36442
22. ₹5,000 is invested every month and in an account paying interest @ 12% per annum compounded monthly. What is the future value of this annuity just after making 11th payment" (Given that $(1.01)^{11} = 1.1156$)
- (a) ₹57,800 (b) ₹56100
(c) ₹56,800 (d) ₹57,100
23. Sinking fund factor is the reciprocal of :
- (a) Present value interest factor of a single cash flow
(b) Present value interest factor of an annuity
(c) Future value interest factor of an annuity
(d) Future value interest factor of a single cash flow.
24. 10 years ago the earning per share (EPS) of ABC Ltd. was ₹ 5 share Its EPS for this year is ₹22. Compute at what rate, EPS of the company grow annually?
- (a) 15.97% (b) 16.77%
(c) 18.64% (d) 14.79%
25. The number of ways 4 boys and 3 girls can be seated in a row so that they are alternates:
- (a) 12 (b) 288
(c) 144 (d) 256
26. How many 3 digit odd numbers can be formed using the digits 5,6,7,8,9, if the digits can be repeated?
- (a) 55 (b) 75
(c) 65 (d) 86
27. If ${}^n P_r = 3024$ and ${}^n C_r = 126$, then find n and r
- (a) 9,4 (b) 10,3
(c) 12,4 (d) 11,4
28. There are 20 points in a plane area. How many triangles can be formed by these points if 5 points are collinear?
- (a) 550 (b) 560
(c) 1130 (d) 1140
29. If pth term of an AP is q and its qth term is p, then what will be the value of (p+q)th term?
- (a) 0 (b) 1
(c) p + q - 1 (d) 2 (p+q - 1)

30. If Arithmetic Mean and Geometric Mean between two number are 5 and 4 respectively, then these numbers are
 (a) 2 & 3 (b) 2 & 8
 (c) 4 & 6 (d) 1 & 16
31. In a GP 5th term is 27 and 8th term is 729. Find its 11th term.
 (a) 729 (b) 6061
 (c) 2187 (d) 19683
32. If $A = \{1,2,3,4,5,7,8,9\}$ and $B = \{2,4,6,7,9\}$ then how many proper subset of $A \cap B$ can be created
 (a) 16 (b) 15
 (c) 32 (d) 31
33. The number of a subjects of the subset (0, 1, 2, 3) is
 (a) 2 (b) 4
 (c) 8 (d) 16
34. Let $A = (1,2,3)$ and consider the relation $R = \{(1,1), (2,2), (3,3), (1,2), (2,3), (1,3)\}$. Then R is
 (a) Symmetric and transitive
 (b) Reflexive but not transitive
 (c) Reflexive but not symmetric
 (d) Neither symmetric, nor transitive
35. If $y = x^x$, then dy/dx at $x = 1$ is equal to
 (a) 0 (b) 1
 (c) -1 (d) 2
36. If $x^5 + y^5 - 5xy = 0$ then $\frac{dy}{dx}$ is
 (a) $\frac{y+x^4}{x+y^1}$ (b) $\frac{y-x^4}{y^4-x}$
 (c) $\frac{x-y^4}{x^1-y}$ (d) $\frac{x+y^4}{x^4+y}$
37. 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 $x = 1$
38. $\int_2^4 \frac{x dx}{x^2+1}$ is
 (a) $A = \frac{1}{2} \log\left(\frac{17}{5}\right)$ (b) $2 \log\left(\frac{17}{5}\right)$
 (c) $\frac{1}{2} \log\left(\frac{5}{17}\right)$ (d) $2 \log\left(\frac{5}{17}\right)$
39. $\int (2x-3)^5 dx$ is
 (a) $\frac{(2x-3)^6}{6}$ (b) $\frac{(2x-3)^6}{2}$
 (c) $\frac{(2x-3)^6}{12}$ (d) $\frac{(2x-3)^6}{3}$

40. Find the area under curve $f(x) = x^2 + 5x + 2$ with the limits 0 to 1
(a) 3.833 (b) 4.388
(c) 4.833 (d) 3.338
41. If 'FROZEN' is decoded as 'OFAPSG'. Tick the right option that depicts 'MOLTEN' written in this way?
(a) OFPOMN (b) OFSMPN
(c) OFUMPN (d) OFUNPN
42. In certain code language, if TOUR, is written as 1234, CLEAR is written 5678 and SPARE is written as 90847, Find the code for CARE?
(a) 1247 (b) 4847
(c) 5247 **(d) 5847**
43. 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) 216473 (d) 214743
44. Find the next number in the given sequence?
11, 17, 39, 85, ?, 281, 447
(a) 133 (b) 143
(c) 153 **(d) 163**
45. Find the missing number in the following series ?
3, 5, 5, 19, 7, 41, 9,?, 11, 109
(a) **71** (b) 61
(b) 69 (d) 70
46. Find the odd man out:
34, 105, 424, 2123, 12756.
(a) 12756 **(b) 2123**
(c) 424 (d) 34
47. Radha moves towards South-East a distance of 7 km, then she moves towards West and travels a distance of 14 km. from here she moves towards North -West a distance of 7 km and finally she moves a distance of 4 km towards east. How far is she now from the starting point?
(a) 3 km (b) 4 km
(c) 10 km (d) 11 km
48. P,Q,R and S are playing a game of carom P,R and S, Q are partners, 'S' is to the right of 'R'. If 'R' is facing West, then 'Q' is facing which direction?
(a) South **(b) North**
(c) East (d) West
49. One morning a boy starts walking in a particular direction for 6 Km and then takes a left turn and walks another 5 Km. thereafter he again takes left turn and walks another 5 Km and at last he takes right turn and walks 5 Km. Now he sees his shadow in front of him. What direction he did start initially?
(a) South **(b) North**
(c) West (d) East

50. It is 3'o clock in a watch. If the minute hand points towards the North-East then the hour hand will point towards the
- (a) South (b) South - West
(c) North- West (d) South - East
51. A man is facing west. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 270 degree in the anticlockwise direction. Find which direction he is facing now?
- (a) South-East (b) West
(c) South (d) South-West
52. Suresh's sister is the wife of Ram, Ram is Rani's brother. Ram's father is Madhur, Sheetal is Ram's grandmother, Rema is sheetal's daughter -in-law. Rohit is Rani's brother's son. Who is Rohit to Suresh?
- (a) Brother-in-law (b) Son
(c) Brother (d) Nephew
53. There are six children playing football namely A,B,C,D,E and F, A & E are brothers, F is sister of E, C is the only son of A's uncle, B & D are daughter of the brother of C's father. How D is related to A?
- (a) Uncle (b) Cousin
(c) Nice (d) Sister
54. In a joint family, there are father, mother, 3 married sons and one unmarried daughter. Out of the sons, two have 2 daughters each and one has a son only. How many female members are there in the family?
- (a) 3 (b) 6
(c) 9 (d) 8
55. When Rani saw Vinit, she recollected that "He is the brother of my grandfather's son". How is Rani related to Vinit?
- (a) Aunt (b) Daughter
(c) Sister (d) Niece
56. Annanya is mother of Satya and Shyam is the son of Bhima, Shiva is brother of Annanya. If Satya is sister of Shyam, How Bhima is related to Shiva?
- (a) Son (b) Cousin
(c) Brother-in-law (d) Son-in-law
57. Suman is daughter-in-law of Rakesh and sister-in-law of Rajesh, Ramesh is the son of Rakesh and only brother of Rajesh. Find the relation of Suman with Ramesh.
- (a) Sister-in-law (b) Cousin
(c) Aunt (d) Wife
58. Pointing to a man in the photograph, Khushi says, "This man's son's sister is my mother -in-law," How is the Khushi's husband related to the man in the photograph?
- (a) Grandson (b) Son
(c) Son in law (d) Cousin

59. Six persons A, B, C, D, E and F are sitting in two rows with three persons in each row. Both rows are in front of each other. E is not at the end of the any row and D is second left to the F, C is neighbor of E and diagonally opposite to D if B is neighbour F who is in front of C then who is sitting diagonally to F?
- (a) C (b) E
(c) A (d) D
60. P, Q, R S and T are sitting in a line facing West. P and Q are sitting together. R is sitting at south end and S is sitting at North end. T is neighbor of Q and R. Who is sitting the middle?
- (a) P (b) Q
(c) R (d) S
61. Which one of the following is source of primary data?
- (a) Government records
(b) Research Articles
(c) Journals
(d) Questionnaire filled by Enumerators
62. Which is the left part of the table providing the description of the rows?
- (a) Captain (b) Box head
(c) Stub (d) Body
63. The suitable formula for computing the number of class intervals is:
- (a) $3.322 \log N$ (b) $0.322 \log N$
(c) $1 + 3.322 \log N$ (d) $1 - 3.322 \log N$
64. Ogive for more than type and less than type distributions intersect at
- (a) Means (b) Median
(c) Mode (d) Origin
65. If mean (\bar{X}) is = 10 and mode (Z) is = 7, then find out the value of median (M)
- (a) 9 (b) 17
(c) 3 (d) 4.33
66. If the coefficient of variation and standard deviation are 30 and 12 respectively, then the arithmetic mean of the distribution is
- (a) 40 (b) 36
(c) 25 (d) 19
67. _____ is based on all the observations and _____ is based on the central fifty percent of the observations.
- (a) Mean deviation, Range
(b) Mean deviation, quartile deviation
(c) Range, standard deviation
(d) Quartile deviation, standard deviation
68. The relationship between two variable x and y is given by $4x - 10y = 20$. If the median value of the variable x is 10 then what is median value of variable y?
- (a) 1.0 (b) 2.0
(c) 3.0 (d) 4.0

69. Which one of the following is not a method of measures of dispersion?
 (a) Standard deviation (b) Mean deviation
 (c) Range (d) Concurrent deviation method
70. Mean deviation is minimum when deviations are taken from:
 (a) Mean (b) Median
 (c) Mode (d) Range
71. The median of the observations 42, 72, 35, 92, 67, 85, 72, 81, 51, 56 is
 (a) 69.5 (b) 72
 (c) 64 (d) 61.5
72. If the sum of square of the value equals to 3390, Number of observation are 30 and Standard deviation is 7, what is the mean value of the above observation?
 (a) 14 (b) 11
 (c) 8 (d) 5
73. The mean of 50 observations is 36. If two observations 30 and 42 are to be excluded, then the mean of the remaining observations will be:
 (a) 36 (b) 38
 (c) 48 (d) 50
74. If the variance of random variable 'x' is 17, then what is variance of $y=2x+5$?
 (a) 34 (b) 39
 (c) 68 (d) 78
75. If the variance of given data is 12, and their mean value is 40, what is coefficient of variation (CV)?
 (a) 5.66% (b) 6.66%
 (c) 7.50% (d) 8.65%
76. In a given set if all data are of same value then variance would be:
 (a) 0 (b) 1
 (c) -1 (d) 0.5
77. If Arithmetic mean between two numbers is 5 and Geometric mean is 4 then what is the value of Harmonic mean?
 (a) 3.2 (b) 3.4
 (c) 3.5 (d) 3.6
78. The average age of 15 students in a class is 9 years. Out of them, the average age of 5 students is 13 years and that 8 students is 5 years. What is the average of remaining 2 students?
 (a) 5 years (b) 9 years
 (c) 10 years (d) 15 years
79. Suppose A and B are two independent events with probabilities $P(A) \neq 0$ and $P(B) \neq 0$. Let A' and B' be their complements. Which one of the following statements in FALSE?
 (a) $P(A \cap B) = P(A)P(B)$ (b) $P(A/B) = P(A)$
 (c) $P(A \cup B) = P(A) + P(B)$ (d) $P(A' \cap B') = P(A')P(B')$

80. The Theorem of Compound Probability states that for any two events A and B.
 (a) $P(A \cap B) = P(A) \times P(B/A)$
 (b) $P(A \cup B) = P(A) \times P(B/A)$
 (c) $P(A \cap B) = P(A) \times P(B)$
 (d) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$
81. 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
82. If $P(A) = \frac{1}{3}$, $P(B) = \frac{3}{4}$ and $P(A \cup B) = \frac{11}{12}$ then $P\left(\frac{B}{A}\right)$ is :
 (a) $\frac{1}{6}$ (b) $\frac{4}{9}$
 (c) $\frac{1}{2}$ (d) $\frac{1}{8}$
83. The probability that is leap year has 53 Monday is:
 (a) $\frac{1}{7}$ (b) $\frac{2}{3}$
 (c) $\frac{2}{7}$ (d) $\frac{3}{5}$
84. If a number is selected at random from the first 50 natural numbers, what will be the probability that the selected number is a multiple of 3 and 4?
 (a) $\frac{5}{50}$ (b) $\frac{2}{25}$
 (c) $\frac{3}{50}$ (d) $\frac{4}{25}$
85. If three coins are tossed simultaneously, what is the probability of getting two heads together?
 (a) $\frac{1}{4}$ (b) $\frac{1}{8}$
 (c) $\frac{5}{8}$ (d) $\frac{3}{8}$
86. If the first quartile is 56.50 and the third quartile is 77.50 then the co-efficient of quartile deviation is
 (a) 618.09 (b) 15.67
 (c) 63.80 (d) 156.71
87. Skewness of Normal Distribution is -
 (a) Negative (b) Positive
 (c) Zero (d) Undefined
88. If Poisson distribution is such that $P(X = 2) = P(X = 3)$ then the variance of the distribution is
 (a) $\sqrt{3}$ (b) 3
 (c) 6 (d) 9
89. The Standard Deviation of Binomial distribution is:
 (a) npq (b) \sqrt{npq}
 (c) np (d) \sqrt{np}

90. The speeds of n number of bikes follow a normal distribution model with a mean of 83 km/hr and a standard deviation of 9.4 km./hr. Find the probability that a bike picked at random is travelling at more than 95 km/hr.?

(a) 0.1587 (b) 0.38
(c) 0.49 (d) 0.278

Note:

Correct answer is $P(x > 95) = 1 - P(x < 95) = 0.10087$, ICAI has not given the correct answer follows the correct answer

91. The equations of the 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. The regression equation are $2x + 3y + 1 = 0$ and $5x + 6y + 1 = 0$, then Mean of x and y respectively are

(a) -1,-1 (b) -1,1
(c) **1, -1** (d) 2,3

93. If $b_{yx} = 0.5$, $b_{xy} = 0.46$ then the value of correlation coefficient is:

(a) 0.23 (b) 0.25
(c) 0.39 (d) **0.48**

94. The coefficient of rank correlation between the ranking of following 6 students in two subjects Mathematics and Statics is:

Mathematics	3	5	8	4	7	10
Statistics	6	4	9	8	1	2

(a) 0.25 (b) 0.35
(c) 0.38 (d) 0.20

Note:

Correct answer is -0.2571 , ICAI has not given the correct answer follows the correct answer

95. Pearson's correlation Coefficient between x and y is :-

(a) $\frac{cov(x,y)}{S_x \cdot S_y}$ (b) $\frac{cov^2(x,y)}{S_x \cdot S_y}$
(c) $\frac{(S_x, S_y)^2}{cov(x,y)}$ (d) $\frac{(S_x, S_y)}{cov(x,y)}$

96. From the following data constructed the index number by laspeyre's method

$$\Sigma P_1 Q_1 = 99, \Sigma P_0 Q_1 = 76, \Sigma P_0 Q_0 = 73, \Sigma P_1 Q_0 = 96$$

(a) 130.36 (b) **131.51**
(c) 130.59 (d) 76.01

97. Which index measures the change from month to month in the cost of a representative basket of goods and services of the type bought by a typical household?

(a) **Retail Price Index** (b) Laspeyre's Index
(c) Fisher's index (d) Paasche's Index

98. 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
99. If Laspeyre's Index is 119 and Paasche's Index is 112. Then Fisher's index number will be.
- (a) 113.99 (b) 115.45
(c) 115.89 (d) 151.98
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
