

Mock Test Paper - Series II: August 2026

Date of Paper: 24th August 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. The fourth proportional to $(a^2 - ab + b^2)$, $(a^3 + b^3)$ and $(a-b)$ is equal to _____
 - (a) $a^2 + b^2$
 - (b) $a^2 - b^2$
 - (c) 1
 - (d) 0
2. A person has assets worth ₹1,80,000. He wants to divide them among his wife, son and daughter in the ratio 4 : 3 : 2. Find the share of the son.
 - (a) ₹80,000
 - (b) ₹60,000
 - (c) ₹40,000
 - (d) ₹50,000
3. Find the value of p from $(\sqrt{4})^{-6} \times (\sqrt{2})^{-4} = 2^p$.
 - (a) 16
 - (b) 8
 - (c) -8
 - (d) 4
4. If $p^q = q^p$ then value of $\left(\frac{p}{q}\right)^{\frac{p}{q}} - p^{\frac{p}{q}-1}$ reduces to
 - (a) p
 - (b) q
 - (c) 0

- (d) none of these
5. The value of $\log_x(0.00001) = -5$, then x is
- (a) 10
(b) 10^2
(c) 1
(d) none of these
6. The sum of a number and its reciprocal is $(41/20)$. The number is
- (a) $-4/5$
(b) $-5/4$
(c) $-4/5$ or $-5/4$
(d) $4/5$ or $5/4$
7. Solve for x , $4^x - 3 \cdot 2^{x+2} + 2^5 = 0$
- (a) 4, 8
(b) $-2, -3$
(c) 2, 6
(d) 2, 3
8. The equation $y^3 - 7y + 6 = 0$ is satisfied by _____
- (a) 1, 2, -3
(b) 1, 2, 3
(c) $-1, -2, 3$
(d) 1, $-2, 3$
9. The roots of the equation $2^{3-y} + 2^{y-2} - 3 = 0$ are _____
- (a) $-2, -3$
(b) 2, 3
(c) 4, 8
(d) None of these
10. If $5 = \sqrt{x + \sqrt{x + \sqrt{x + \dots \infty}}}$, then value of x is

- (a) 10
 - (b) 20
 - (c) 5
 - (d) ∞
11. The sum of the digits of a two digit number is 12. If the digits are reversed, the number is decreased by 18. Find the number.
- (a) 75
 - (b) 93
 - (c) 84
 - (d) 57
12. Solve for x , $x-3 \geq 2x+9$
- (a) $x \geq 4$
 - (b) $x \leq -12$
 - (c) $x \geq 6$
 - (d) $x \leq 6$
13. If $4x+3 > 19$, then x belongs to:
- (a) $x > 4$
 - (b) $x < 4$
 - (c) $x \geq 4$
 - (d) $x \leq 4$
14. ₹ 20,000 is invested at an annual rate of interest of 10% p.a. The amount after 2 years, compounded annually, is:
- (a) ₹ 24,000
 - (b) ₹ 24,200
 - (c) ₹ 24,400
 - (d) ₹ 22,000
15. At what interest rate will a sum doubles itself in 7 years, if the interest is compounded annually.

- (a) 7.0%
 - (b) 8.0%
 - (c) 10.41%
 - (d) 7.9%
16. A machine for which the useful life is estimated to be 5 years, Cost ₹ 5000 and Rate of depreciation is 10% p.a. The scrap value at the end of its life is
- (a) 2952.45
 - (b) 2500.00
 - (c) 3000.00
 - (d) 2559.50
17. The sum required to earn a monthly interest of Rs 1200 at 18% per annum Simple Interest is
- (a) ₹ 50000
 - (b) ₹ 60000
 - (c) ₹ 80000
 - (d) none of these
18. On what sum will the compound interest at 5% per annum for two years compounded annually be ₹1640?
- (a) ₹ 16000
 - (b) ₹ 17000
 - (c) ₹ 18000
 - (d) ₹ 19000
19. Find the future value of an annuity of ₹500 is made annually for 7 years at interest rate of 14% compounded annually. Given that $(1.14)^7 = 2.5023$.
- (a) ₹5635.25
 - (b) ₹5365.25
 - (c) ₹6535.25
 - (d) ₹6355.25

20. The effective rate of interest corresponding to a nominal rate 3% p.a payable half yearly is
- (a) 3.2% p.a.
 - (b) 3.25% p.a.
 - (c) 3.0225% p.a.
 - (d) None of these
21. If the simple interest on ₹ 1,200 be more the interest on ₹ 1,000 by ₹ 30 in 3 years Find the rate percent per annum.
- (a) 7%
 - (b) 6%
 - (c) 5%
 - (d) none of these
22. If the present value of future cash inflows is ₹ 75,000 and the initial investment is ₹ 60,000, the NPV is:
- (a) ₹ 15,000
 - (b) ₹ 1,35,000
 - (c) ₹ 60,000
 - (d) ₹ 75,000
23. A perpetuity provides an annual cash flow of ₹ 8,000. If the required rate of return is 8% p.a., its present value is:
- (a) ₹ 64,000
 - (b) ₹ 80,000
 - (c) ₹ 1,00,000
 - (d) ₹ 1,08,000
24. A company's revenue increases from ₹ 50 lakh to ₹ 72 lakh in 2 years The CAGR is:
- (a) 15%
 - (b) 18%
 - (c) 20%
 - (d) 22%

25. Find the value of n if $(n+1)! = 42(n-1)!$
- (a) 6
 - (b) - 7
 - (c) 7
 - (d) - 6
26. Every two person shakes hands with each other in a party and the total number of hand shakes is 66. The number of guests in the party is
- (a) 11
 - (b) 12
 - (c) 13
 - (d) 14
27. In _____ ways can 4 Americans and 4 English men be seated at a round table so that no 2 Americans may be together?
- (a) $4! \times 3!$
 - (b) 4P_4
 - (c) $3 \times {}^4P_4$
 - (d) 4C_4
28. 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) 1 20
 - (c) 48
 - (d) none of these
29. The sum of the following 5, 9, 13, 17..... 25 terms in AP is
- (a) 1320
 - (b) 1620
 - (c) 1325
 - (d) 1625

30. The 4th term of series whose sum to n terms is $5n^2+2n$ is
- $5n + 3$
 - $10n-2$
 - $5n+2$
 - $10n-3$
31. The series $\frac{1}{3} + \frac{1}{3^2} + \frac{1}{3^3} + \frac{1}{3^4} + \dots$ to ∞ is
- $\frac{1}{3}$
 - $\frac{1}{2}$
 - $\frac{1}{6}$
 - none of these
32. Find the $f \circ g$ for the functions $f(x) = x^2$, $g(x) = x+1$
- $x^2(x+1)$
 - x^2
 - $x+1$
 - $(x+1)^2$
33. If a function in x is defined by $f(x) = \frac{x}{x^2+1}$, $X \in R$ then $f(1/x) =$ _____
- $f(x)$
 - $f(-x)$
 - $-f(x)$
 - 0
34. If $f(x)=x^2-1$ and $g(x) = \frac{x+1}{2}$, then $\frac{f(3)}{f(3)+g(3)}$ is
- $5/4$
 - $4/5$
 - $3/5$
 - $5/3$

35. $\lim_{x \rightarrow 1} \frac{x^2 - 4x + 3}{x^2 - 6x + 5} =$
- (a) $1/5$
 - (b) $3/5$
 - (c) $1/2$
 - (d) 0
36. If $\lim_{x \rightarrow 3} \frac{x^n - 3^n}{x - 3} = 405$, then value of n is equal to
- (a) 4
 - (b) 6
 - (c) 5
 - (d) 7
37. Evaluate result of $\int (x^2 - 1)^2 dx$ is
- (a) $x^5/5 - 2/3 x^3 + x + k$
 - (b) $x^5/5 - 2/3 x^3 + x$
 - (c) $2x$
 - (d) None of these.
38. If $u = (x^3 + 1)^5$ and $y = (x^3 + 5x + 7)$ then $\frac{du}{dy}$ is
- (a) $\frac{10x(x^2 + 1)^4}{3x^2 + 5}$
 - (b) $\frac{10(x^2 + 1)^4}{3x^2 + 5}$
 - (c) $5x(x^2 + 1)^4$
 - (d) None of these
39. Find $\frac{dy}{dx}$ of $\left(\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1\right)$
- (a) $-b^2x / a^2y$
 - (b) $-b^2y / a^2x$
 - (c) $-b^2 / a^2$
 - (d) 0

40. If $y = e^x - e^{-x}$ then $\frac{dy}{dx} - \sqrt{y^2 + 4}$ is equal to
- (a) 1
 - (b) -1
 - (c) 0
 - (d) None of these
41. Find the odd one out: 3, 8, 15, 24, 35, 48, 62, 80
- (a) 24
 - (b) 35
 - (c) 48
 - (d) 62
42. In a certain code, GARDEN is written as ICTFGP. How will FLOWER be written?
- (a) HNQYGT
 - (b) HNQYFS
 - (c) GNPXGT
 - (d) HMQYGT
43. Find the wrong term of the series 5, 11, 25, 51, 103, 207
- (a) 11
 - (b) 25
 - (c) 51
 - (d) 103
44. If in a certain language, TABLE is coded as UBCMF, how is CHAIR coded?
- (a) DIBJS
 - (b) DIBIR
 - (c) DIBJT
 - (d) DHCJS
45. Complete the given series: 1, 6, 15, 28, 45, 66, ?
- (a) 81

- (b) 91
 - (c) 93
 - (d) 96
46. Ravi walks 6 km towards North from his office. He then turns right and walks 4 km. He again turns right and walks 6 km. In which direction is he from his office?
- (a) East
 - (b) West
 - (c) North-East
 - (d) South-East
47. A person walks 40 meters towards East, turns left and walks 30 metres, then turns left again and walks 40 metres. How far and in which direction is he from the starting point?
- (a) 30 metres North
 - (b) 30 metres South
 - (c) 40 metres East
 - (d) 50 metres North
48. A man walks 30 m North, turns right and walks 40 m, turns right and walks 20 m, then turns left and walks 30 m. In which direction is he from his starting point?
- (a) North-East
 - (b) South-East
 - (c) South-West
 - (d) North-West
49. A person starts facing East. He turns 45° anticlockwise, then 90° clockwise, and finally 135° anticlockwise. What is his final direction?
- (a) North
 - (b) South
 - (c) North-West
 - (d) South-West
50. A hunter is chasing a deer, by running 200 metres in the east direction, turns to his right, runs 100 metres and turns to his right, runs 90 metres. Turning to his left, he runs 50

metres and then turns to left, runs 120 metres. Finally, he turns to left and runs 60 metres. He finds the deer in front of him at 100 metres. In which direction is the hunter standing with respect to the deer?

- (a) South
 - (b) North
 - (c) East
 - (d) West
51. Six persons P, Q, R, S, T and U are sitting in two rows of three each, all facing north. P is in the middle of the first row. Q is to the left of P. R is to the right of P. S is in the middle of the second row. T is to the left of S. Who is sitting at the right end of the second row?
- (a) P
 - (b) R
 - (c) U
 - (d) T
52. Seven persons P, Q, R, S, T, U and V are standing in a row facing north. P is to the right of Q. R is third to the left of P. S is at the extreme left. T is between Q and R. U is immediately right of P. Who is immediately right of U?
- (a) V
 - (b) Q
 - (c) R
 - (d) T
53. Eight persons A, B, C, D, E, F, G and H are sitting in two rows of four each, facing each other. A, B, C and D are in the first row. E, F, G and H are in the second row. A is opposite F. B is immediately right of A. C is opposite H. Who is opposite B?
- (a) E
 - (b) F
 - (c) G
 - (d) H

54. Eight persons A, B, C, D, E, F, G and H are sitting in a circle facing the centre. A is second to the right of B. C is immediately right of A. D is opposite B. E is immediately left of D. Who is immediately right of E?
- (a) F
 - (b) G
 - (c) D
 - (d) H
55. Six persons A, B, C, D, E and F are sitting at the six vertices of a regular hexagon. A is not adjacent to B or C. D is not adjacent to C or E. B and C are adjacent. Which pair is definitely a neighbouring pair?
- (a) A and B
 - (b) A and C
 - (c) B and C
 - (d) C and E
56. A man said, "The daughter of my mother's only son is the sister of this boy." How is the man related to the boy?
- (a) Father
 - (b) Uncle
 - (c) Brother
 - (d) Grandfather
57. A family consists of 10 members P, Q, R, S, T, U, V, W, X and Y.
- P is the father of Q.
 - R is the wife of P.
 - Q is the brother of S.
 - S is the wife of T.
 - U is the daughter of S.
 - V is the son of S.
 - W is the brother of T.
 - X is the wife of W.

- Y is the daughter of X.

How many male members are there?

- (a) 4
 - (b) 5
 - (c) 6
 - (d) 7
58. If: P @ Q means P is the son of Q , P # Q means P is the daughter of Q , P \$ Q means P is the brother of Q and P % Q means P is the sister of Q . Then what is the relation of A to D? A @ B \$ C % D
- (a) Son
 - (b) Nephew
 - (c) Grandson
 - (d) Brother
59. Pointing to a boy, Neha said, "He is the son of the only daughter of my mother's only son." How is the boy related to Neha?
- (a) Brother
 - (b) Son
 - (c) Nephew
 - (d) Cousin
60. A and B are brothers. C is the sister of A. D is the mother of B. E is the father of D. How is E related to A?
- (a) Father
 - (b) Grandfather
 - (c) Maternal Grandfather
 - (d) Uncle
61. When the data are classified in respect of successive time points, they are known as_____.
- (a) Chronological data
 - (b) Geographical data

- (c) Ordinal data
- (d) Cardinal data

62. The following data relate to the incomes of 100 persons:

Income (₹)	No. of persons
500–999	10
1,000–1,499	25
1,500–1,999	40
2,000–2,499	25

What percentage of persons earn ₹1,500 or more?

- (a) 50%
 - (b) 60%
 - (c) 65%
 - (d) 75%
63. Find the number of observations between 100 and 200:

Value	No. of observations
More than 50	95
More than 100	75
More than 200	45
More than 300	20

- (a) 20
- (b) 25
- (c) 30
- (d) 35

Answer: (c) 30

64. Which of the following is an example of bivariate data?

- (a) Heights of 50 students
- (b) Marks of 100 students in Mathematics

- (c) Heights and weights of 50 students
 - (d) Population of a city for 10 years
65. Data obtained from census reports, government publications and published reports are generally:
- (a) Primary data
 - (b) Secondary data
 - (c) Qualitative data
 - (d) Continuous data
66. The width of each of 12 classes is 2.5. If the lower class boundary of the lowest class is 7.5, the upper class boundary of the highest class is:
- (a) 3 5.0
 - (b) 37.5
 - (c) 40.0
 - (d) 4 2.5
67. In a group of 40 persons, the average weight is 60 kg. If the average weight of males and females is 75 kg and 50 kg respectively, find the ratio of the number of males to females.
- (a) 2 : 3
 - (b) 3 : 2
 - (c) 2 : 1
 - (d) 1 : 2
68. The class interval having the highest frequency is called:
- (a) Modal class
 - (b) Median class
 - (c) Mean class
 - (d) Quartile class
69. For a moderately skewed distribution, which relationship holds?
- (a) $\text{Mean} - \text{Mode} = 3(\text{Mean} - \text{Median})$
 - (b) $\text{Median} - \text{Mode} = 3(\text{Mean} - \text{Median})$

- (c) Mean – Median = 3(Mean – Mode)
- (d) Mean – Median = 3(Median – Mode)
70. The sum of deviations of observations from their arithmetic mean is always:
- (a) 1
- (b) Zero
- (c) Maximum
- (d) Minimum
71. If A.M. = 20 and H.M. = 12 for two positive numbers, their G.M. is:
- (a) 12
- (b) 14
- (c) $\sqrt{240}$
- (d) 16
72. The average of 7 numbers is 18. If one number is replaced by 30, the average increases to 20. The number that was replaced is:
- (a) 14
- (b) 16
- (c) 18
- (d) 20
73. If the standard deviation of x is 4, what will be the standard deviation of $3x-7$?
- (a) 4
- (b) 7
- (c) 12
- (d) 21
74. The third decile of the following observations is: 14,8,21,17,11,25,19,10,13
- (a) 10.5
- (b) 11
- (c) 12.0
- (d) 12.5

75. If the range of x is 15, then the range of $\frac{3x-7}{2}$ is:
- (a) 15
 - (b) 22.5
 - (c) 30
 - (d) 45
76. If the overall percentage of success in an examination is 70%, what is the probability that out of a group of 5 students, at least one student has passed?
- (a) 0.00243
 - (b) 0.16807
 - (c) 0.99757
 - (d) 0.83193
77. If the mode of a data set is 18 and its mean is 24, then the median is:
- (a) 18
 - (b) 24
 - (c) 22
 - (d) 21
78. The median of the 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
79. 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
80. A letter is selected at random from the word RANGE and another letter is selected at random from the word PAGE. The probability that the two letters selected are the same is:
- (a) $1/20$
 (b) $3/20$
 (c) $3/5$
 (d) $3/4$
81. If one of the regression coefficients 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
82. Which of the following regression equations represents the regression line of Y on X?
 $7x+2y+15=0$ $2x+5y+10=0$
- (a) $7x+2y+15=0$
 (b) $2x+5y+10=0$
 (c) Both (a) and (b)
 (d) None of these
83. 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. The correct coefficient of rank correlation is:
- (a) 0.32
 (b) 0.26
 (c) 0.49
 (d) 0.93
84. Two random variables have the following regression lines: $3x+2y=26$ and $6x+y=31$. The coefficient of correlation between x and y is:

- (a) -0.025
 (b) 0.5
 (c) -0.5
 (d) 0.25
85. The probability of a girl getting a scholarship is 0.6 and the probability of a boy getting a scholarship is 0.8 . Find the probability that at least one of them gets the scholarship.
- (a) 0.32
 (b) 0.44
 (c) 0.92
 (d) None of the above
86. The odds in favour of A solving a problem are $5 : 7$, and the odds against B solving the same problem are $9 : 6$. What is the probability that, if both of them try independently, the problem will be solved?
- (a) $117/180$
 (b) $181/200$
 (c) $147/180$
 (d) $119/180$
87. The daily demand for calculators has the following probability distribution:
- | | | | | | | |
|--------------------|------|------|------|------|------|------|
| Demand X | 1 | 2 | 3 | 4 | 5 | 6 |
| Probability $P(X)$ | 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
88. An urn contains 9 balls, of which 2 are red, 3 are blue, and 4 are black. Three balls are drawn at random. The probability that all three balls are of the same colour is:
- (a) $3/27$

- (b) 20/31
(c) 5/84
(d) None of these
89. A sample of 100 dry battery cells was tested to find the length of life. The mean life was found to be 12 hours and the standard deviation was 3 hours. What percentage of battery cells are expected to have a life of less than 6 hours? (Given: Area under the normal curve from $z=0$ to $z=2$ is 0.4772.)
- (a) 2.28%
(b) 2.56%
(c) 4.56%
(d) 1.93%
90. If 5% of the families in Kolkata do not use 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 fuel? {Given : $e^{-5} = 0.0067$ }
- (a) 0.038
(b) 0.028
(c) 0.048
(d) 0.018
91. Suppose the weather records show that, on an average, 5 out of 31 days in October are rainy days. Assuming a binomial distribution, with each day of October as an independent trial, the probability that the next October will have at most 3 rainy days is:
- (a) 0.4403
(b) 0.2403
(c) 0.3403
(d) None of these
92. The probability density function of a normal random variable X , with mean μ and standard deviation σ , is given by:

(a)
$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} \cdot e^{\frac{-(x-\mu)^2}{2\sigma^2}}, \text{ for } -\infty < x < \infty$$

(b) $f(x) = \frac{1}{\sqrt{2\pi}\sigma} \cdot e^{\frac{-(-x-\mu)^2}{2\sigma^2}}, \text{ for } -\infty < x < \infty$

(c) $f(x) = \frac{1}{\sigma\sqrt{2\pi}} \cdot e^{\frac{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}{2}}, \text{ for } -\infty < x < \infty$

(d) None of these

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

(a) Dependent

(b) Independent

(c) Both

(d) None of these

94. A _____ distribution is a theoretical distribution that expresses the functional relation between each of the distinct values of the sample statistic and the corresponding probability.

(a) Normal

(b) Binomial

(c) Poisson

(d) Sampling

95. Simple random sampling is very effective if _____

(a) The population is not very large.

(b) The population is not much heterogeneous.

(c) The population is partitioned into several sections.

(d) Both (a) and (b)

96. The test of shifting the base is called

(a) Unit Test.

(b) Time Reversal Test.

(c) Circular Test.

(d) None of these.

97. If with rise of 10% in prices the wages are increased by 20%. Find the percentage of real wage increase
- (a) 109.29%
 - (b) 9.09%
 - (c) 9.29%
 - (d) None of these
98. For factor reversal test: $P_{01} \times Q_{01} = \frac{\sum P_1 Q_1}{\sum P_0 Q_0}$ = True Value Ratio (T.V.R.) This is
- (a) False
 - (b) True
 - (c) Both (a) & (b)
 - (d) None of these
99. Between 2024 and 2025, the price of a commodity increased by 60% while the production decreased by 30%. By what percentage did the value index of production of commodity change in 2025 with respect to its value 2024.
- (a) 10%
 - (b) 15%
 - (c) 12%
 - (d) none of these
100. Expenditure of a family on three items are in the ratio of 2: 5: 3. The prices of these commodities rise by 30%, 20% and 40% respectively. By what percent has total expenditure increased?
- (a) 28%
 - (b) 25%
 - (c) 20%
 - (d) None of these