J.K. SHAH TEST SERIES
Evaluate Learn Succeed

CA FOUNDATION

Test Code – JK-QA-02

(Date: 12-09-2020)

(Marks - 100)

Write the most appropriate answer to each of the following multiple choice questions by choosing one of the four options given. All questions are compulsory.

Section A - Business Mathematics

1. A man divides his property so that his son's share to his wife's share and the wife's share to his daughter's share are both in the ratio 3: 1. If the daughter gets ₹ 10,000 less than the son, then the total worth of his property is:

(a) ₹ 16250 (b) ₹ 18250

(c) ₹ 15250 (d) ₹ 21250

2. Ram distributes his pens among four friends A, B, C ad D in the ratio $\frac{1}{3}:\frac{1}{4}:\frac{1}{5}:\frac{1}{6}$. The minimum number of pens that the Ram should have is:

(a) 37 (b) 47

(c) 57 (d) 67

3. If A's money is to B's money as 4:5 and B's money is to C's money as 2:3 and A has ₹ 800, then C has:

(a) ₹ 1000 (b) ₹ 1200

(c) ₹ 1500 (d) ₹ 2000

4. The ratio between the number of passengers travelling by I and II class between the two railway stations is 1:50, whereas the ratio of I and II class fares between the same station is 3:1. If on a particular day, ₹ 1325 were collected from the passengers travelling between these stations, then what was the amount collected from the II class passenger?

(a) ₹ 750 (b) ₹ 850

(c) ₹ 1000 (d) ₹ 1250

5. $64^{-\frac{1}{2}} - (-32)^{-\frac{4}{5}} = x$, then the value of x is :

(a) $\frac{1}{8}$ (b) $\frac{3}{8}$

(c) $\frac{1}{16}$ (d) $2\frac{2}{7}$

6. The number of prime factors in $\frac{\mathbf{6^{12}\times(35)^{28}\times(15)^{16}}}{\mathbf{(14)^{12}\times(21)^{11}}}$ is :

(a) 56 (b) 66

(c) 112 (d) None of these.

7. If $a = 3^{\frac{-1}{4}} + 3^{\frac{-1}{4}}$ and $b = 3^{\frac{1}{4}} - 3^{\frac{-1}{4}}$ then the value of $(a^2 + b^2)^2$ is:

(a) 67 (b) 65

(c) 64 (d) None of these.

8. If $\log_3 x \ \log_y 3 \log_2 y = 5$, then x equals:

(a) y^5 (b) 243

(c) 32 (d) None of these.

9. $\log_{27}(\log_3 x) = \frac{1}{3} \Rightarrow x =$

(a) 3 (b) 6

(c) 9 (d) 27

10. A labourer is engaged for 20 days on the condition that he will receive ₹ 60 for each day he works and he will be fined ₹ 5 for each day he is absent. If he receives ₹ 745 in all, for how many days he remained absent?

(a) 7 days (b) 9 days

(c) 11 days (d) 5 days.

11. The solution of the equations: $\frac{15}{u} + \frac{2}{v} = 17; \frac{1}{u} + \frac{1}{v} = \frac{36}{5}$ is:

(a) (5,1/7) (b) (-5, 1/7)

(c) (-5, -1/7) (d) None of these.

12. The perimeter of a rectangular field is 140 m. If the length of the field is increased by 2 m and its breadth decreased by 3 m, the area is decreased by 66 sq. m. Find the length and breadth of the field.

(a) 40 cm, 30 cm (b) 45 cm, 25 cm

(c) 50 cm, 20 cm (d) None of these.

13. If one root of the equation: $x^2 - 8x + m = 0$ exceeds the other by 4, then the value of m is:

(a) m = 10 (b) m = 11

(c) m = 9 (d) m = 12.

14. The roots of the equation: $lx^2 + mx + n = 0$ are in the ratio 3:4, then $12m^2 = knl$, where $k =$

(a) 32 (b) 49

(c) 43 (d) 59

15. The real roots of the equation:$2x^4 - 3x^3 - x^2 - 3x + 2 = 0, x \neq 0$ are:

(a) (2,1/2) (b) (3,1/3)

(c) (2,-1/2) (d) (3,-1/3).

16. Suppose a man needs a minimum of 50 units of carbohydrate, 40 units of proteins per month for good health. He is taking food at two places, viz., A and B, food at A contains 4 and 5 units of carbohydrates and proteins respectively. Food at B contains, and 3 units of carbohydrates and 3 units of proteins respectively. Express this in the form of a linear inequalities assuming the man is keeping good health.

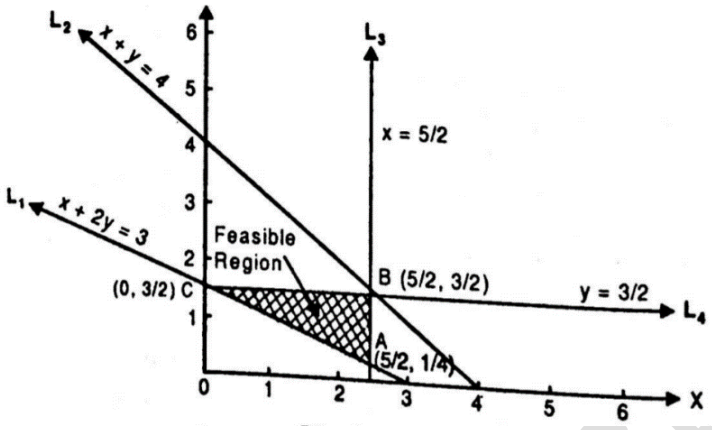
[Hint. Let x_1 and x_2 represents carbohydrates and proteins respectively. Then the mathematical inequalities are:]

(a) $4x_1 + x_2 \geq 50$
$5x_1 + 3x_2 \geq 40$
$x_1 \geq 0 ; x_2 \geq 0$

(b) $4x_1 + x_2 \geq 50$
$5x_1 + 3x_2 \leq 40$
$x_1 \geq 0 ; x_2 \geq 0$

(c) $4x_1 + x_2 \leq 50$
$5x_1 + 3x_2 \geq 40$
$x_1 \geq 0 ; x_2 \geq 0$

(d) None of these.



17. Graphs of four inequalities are given below:

L_1: $x + 2y = 3$ L_2: $x + y = 4$ L_3: $x = 5/2$ L_4: $y = 3/2$

The shaded region ABC belongs to the constraints:

(a) $x + 2y \geq 3$
$x + y \leq 4$
$0 \leq x \leq 5/2$
$0 \leq y \leq 3/2$
$x \geq 0 \; ; \; y \geq 0$

(b) $x + 2y \leq 3$
$x + y \leq 4$
$0 \leq x \leq 5/2$
$0 \leq y \leq 3/2$
$x \geq 0 \; ; \; y \geq 0$

(c) $x + 2y \geq 3$
$x + y \geq 40$
$0 \leq x \leq 5/2$
$0 \leq y \leq 3/2$
$x \geq 0 \; ; \; y \geq 0$

(d) None of these.

18. At what rate per cent per annum will ₹ 1000 amount to ₹ 1331 in 3 years? The interest is compounded yearly.

(a) 10% p.a. (b) 12% p.a.
(c) 13% p.a. (d) None of these.

19. A man borrows ₹ 2550 to be paid back with compound interest at the rate of 4% per annum by the end of 2 years in two equal yearly instalments. How much will each instalment be?

(a) ₹ 1275 (b) ₹ 1283
(c) ₹ 1352 (d) ₹ 1377.

20. A machine depreciates at 10% of its value at the beginning of a year. The cost and scrap value realized at the time of sale being ₹ 23240 and ₹ 9000 respectively. For how many years the machine was put to use?

(a) 7 years (b) 8 years
(c) 9 years (d) 10 years

21. From a class of 14 boys and 10 girls, ten students are to be chosen for a competition, at least including 4 boys and 4 girls. The 2 girls who won the prize last year should be included. In how many ways can the selection be made ?

(a) 104874 (b) 105878
(c) 105874 (d) None of these.

22. If ${}^{2n}C_3 : {}^{n}C_2 = 12 : 1$, then the value of n is :

(a) 4 (b) 5
(c) 6 (d) 10

23. $[1\ 2\ 3]\begin{bmatrix}\log_{10}2\\ \log_{10}3\\ \log_{10}4\end{bmatrix} =$

(a) $\log_{10}1521$ (b) $\log_{10}1152$
(c) $\log_{10}5211$ (d) $\log_{10}2151$

24. In how many ways the vowels of the word "ALLAHABAD" will occupy the even places?

(a) 120 (b) 60
(c) 306 (d) None of these

25. The number of ways in which 9 things can be divided into three groups containing 2, 3, and 4 things respectively is:

(a) 1250 (b) 1260

(c) 1200 (d) none of these.

26. If x, y, z are in A.P. and x, y -x, z -x are in G.P., then x : y : z is :

(a) 1:3:5 (b) 1:2:3

(c) 1:3:7 (d) 1:4:6.

27. If the sum of n terms of an A.P. is $3n^2 + 5n$, then which of its terms is 164 ?

(a) 26th (b) 25th

(c) 28^{th} (d) 27th

28. If $\sum$n = 55, then $\sum n^2$ equal to: (n for natural numbers)

(a) 3025 (b) 506

(c) 385 (d) 1015.

29. The next term of the series $\sqrt{3}, \sqrt{12}, \sqrt{27}, \sqrt{48}, ...$ is:

(a) $\sqrt{75}$ (b) $\sqrt{108}$

(c) $\sqrt{48}$ (d) None of these.

30. If R is the set of isosceles right angled triangles and I is set of isosceles triangles, then

(a) $R = I$ (b) $R \supset I$

(c) $R \subset I$ (d) None of these.

31. In a group of 400, each of whom is at least accountant or management consultant or sales manager, it was found that 160 are only accountant, 220 are only management consultant and 260 are sales manager, 50 are accountant as well as sales manager, 20 are accountant as well as management consultant as well as sales manager. Find the number of those who are accountant as well as management consultant but not sales manager.

(a) 20 (b) 15

(c) 25 (d) 45

32. The range of {(3,0),(2,0),(1,0),(0,0)} is :

(a) (0,0) (b) (O)

(c) (0,0, 0, 0) (d) None of these.

33. If $f, g : R \to R$, be defined by $f(x) = x^2 + 2x - 3$, $g(x) = 3x - 4$ for all $x \in R$, then gof is :

(a) $3x^2 + 6x - 13$ (b) $9x^2 - 18x + 5$

(c) $3x^2 - 6x + 13$ (d) None of these.

34. $A = \{1,2,3\}$ $R = \{(1,1), (2,2), (3,3), (1,2), (2,1), (3,2)\} \subseteq A$ x A, then R is:

(a) reflexive, transitive but not symmetric

(b) transitive, reflexive and symmetric

(c) reflexive, symmetric but not transitive

(d) reflexive, but not symmetric and not transitive.

35. If $y = \left(x^{1/3} - x^{-1/3}\right)^3$, then dy/dx is:

(a) $1 + x^{-2} - x^{-2/3} - x^{-4/3}$

(b) $1 + x^{-2} + x^{-2/3} - x^{-4/3}$

(c) $1 + x^{-2} + x^{-2/3} + x^{-4/3}$

(d) None of these.

36. If $y = 2^{(x+3)} + (4/\log_x 3)$, then dy/dx is :

(a) $8 \cdot 2^x \log 2 + (4/x) \log_3 e$

(b) $8 \cdot 2^x + (4/x) \log_3 e$

(c) $2^{x-2} \log 2 + (4/x) \log_3 e$

(d) None of these.

37. The derivative of e^x w.r.t. to log x is:

(a) $x\, e^x$ (b) (e^x/x)

(c) (e^x/x^2) (d) $x^2 e^x$

38. Integrate w.r.t x, $(x^3 + 2)^{1/2}\, x^2$

(a) $(2/9)\ (x^3 + 2)^{3/2} + k$ (b) $(2/3)\ (x^3 + 2)^{3/2} + k$

(c) $(9/2)\ (x^3 + 2)^{3/2} + k$ (d) None of these.

39. $\int \frac{x^2+1}{(x+1)^2} e^x \, dx =$

(a) $e^x\left(\frac{x-1}{x+1}\right) + c$ (b) $e^x\left(\frac{x+1}{x-1}\right) + c$

(c) $2e^x\left(\frac{x-1}{x+1}\right) + c$ (d) None of these.

40. $\int_0^4 \sqrt{3x+4} \, dx$ is equal to

(a) 9/112 (b) 112/9

(c) 11/9 (d) None of these.

Section B – Logical Reasoning

41. $2, 2, 4, 6, ?, 10, 8, 14, 10$

(a) 5 (b) 8

(c) 7 (d) 6

42. Which term will replace the question mark?

A2B C4D E8F? I32J

(a) G10H (b) G12H

(c) I12H (d) G16H

NOTE:

Directions (Q. 43-45): Read the following information carefully and answer the given questions.

Ankit, Ameen, Aman, Annu, Amita, Amil and Ankita are sitting around a circular table facing towards the center, but not necessarily in the same order.

Ankit is second to the right of Amita. Amit is not an immediate neighbour of Amita. Ankita is second to the right of Annu. Amina is third to the right of Ankit. Aman is second to the left of Amita and third to the right of Ameen.

43. Who sits to the immediate right of Amita?

(a) Annu (b) Ankita

(c) Ankit (d) Aman.

44. Amit sits between _____ and _____.

(a) Annu, Ankita (b) Ameen, Ankit

(c) Amina, Aman (d) None of these.

45. How many persons sit between Annu and Aman (starting from Annu in clockwise direction)?

(a) None (b) One
(c) Two (d) Four.

Note:

(a) If only conclusion (II) follows
(b) If either (I) or (II) follows
(c) If neither (I) nor (II) follows
(d) If both (I) and (II) follow

46. Statements:
i. No glass is a cup.
ii. No Cup is a spoon.
Conclusions:
i. No glass is a spoon.
ii. At least, some spoons are glasses.

47 Statements:
i. All bulbs are fans.
ii. Some fans are TVs.
Conclusions:
i. Some bulbs are TVs.
ii. No bulbs is a TV.

Note:

(a) If only conclusion (II) follows
(b) If either conclusion (I) or (II) follows
(c) If neither conclusion (I) nor (II) follows
(d) If both conclusions (I) and (II) follows

48. Statements:
i. Some button are shirts
ii. No shirt is pant.
ii. All pants are cloth.
Conclusions:
i. No cloth is button.
ii. Some pant are button,

49. Statement:
i. Some phone are mobiles
ii. Some mobile are charger
ii. Some chargers are batteries.
Conclusions:
i. Some phones are batteries.
ii. Some chargers are phones.

50. Raju cycled 10 km south from his house, turned right and went 5 km and again turned right and cycled 10 km and then turned left and cycled 10 km. How many kilometers will he have to cycle back to reach his house?
(a) 5m (b) 20 km
(c) 15 km (d) 10 km.

51. Rajat walks 15m south from his home, turns left and walks 20m again turns left and runs 30 m, then turns right and walks 3 m to reach his school. In which direction is his school from his home?
(a) North (b) South
(c) North-east (d) South-east.

52. Jaffar, starting from a fixed point, goes 15 km towards north and then after turning to his right, he goes 15 km. Then he goes 10, 15 and 15 km after turning to his left each time. How far is he from his starting point?
(a) 20 km (b) 15 km
(c) 5 km (d) 10 km.

53. E, GH, JKL, ?, STUVW
(a) MNOP (b) NOPQ
(c) OPQR (d) PQRS

54. 36 43 53 66 ? 101
(a) 77 (b) 79
(c) 82 (d) 85

55. P's father Q is B's paternal uncle and A's husband M is P's paternal uncle. How is A related to B?

(a) Mother (b) Sister
(c) Cousin (d) Daughter

56. A man said to a lady, "Your father's wife's daughter is my sister." How is the lady's mother related to the man?

(a) Aunt (b) Granddaughter
(c) Mother (d) Sister

Note:

Directions (Q. 57-59): Read the following information carefully and answer the questions that follows:

'A × B' means 'A is the wife of B'.
'A – B' means 'A is the mother of B'.
'A + B' means 'A is the mother-in-law of B'.
'A ÷ B' means 'A is the son of B'
The following questions are based on the expressions given below
A + B; Z × X ÷ A; M × Y ÷ A; Z – L

57. Who is the father of L?

(a) A (b) Y
(c) M (d) X

58. How is L related to Y?

(a) Son (b) Daughter
(c) Uncle (d) Cannot be determined

59. How is A related to D?

(a) Son (b) Daughter
(c) Son-in-law (d) Cannot be determined

60. Pointing to a photograph, Raman said "She is the daughter of my grandfather's only son". How is Raman related to the woman in the photograph?

(a) Father (b) Brother-in-law
(c) Brother (d) Cousin

Section C - Statistic

61. Diagrammatic representation of data is done by:
(a) Pictures (b) Charts
(c) Diagrams (d) All these.

62. (Class frequency)/(Width of the class) is defined as:
(a) Frequency density (b) Frequency distribution
(c) Both (a) and (b) (d) None of these.

63. Unequal widths of classes in the frequency distribution do not cause any difficulty in the construction of
(a) Ogive (b) Histogram
(c) Frequency Polygon (d) None of these.

64. For a particular class boundary, the less than cumulative frequency add up to
(a) total frequency
(b) fifty per cent of the total frequency
(c) Either (a) or (b)
(d) None of these.

65. While computing the A.M from a grouped frequency distribution, we assume that
(a) The classes are of equal length
(b) The classes have equal frequency
(c) All the values of a class are equal to the mid-value of that class
(d) None of these.

66. In the case of continuous frequency distribution, the size of the …… item indicates class interval in which the median lies.
(a) (n-1)/2th (b) (n + 1)/2th
(c) (n/2)th (d) None of these.

67. The mean of the values of 0 , 1, 2, …….., n, having corresponding weight ${}^nC_0$, ${}^nC_1$, ${}^nC_2$, ……, ${}^nC_n$ respectively is:
(a) $\frac{2^n}{n+1}$ (b) $\frac{2^{n+1}}{n(n+1)}$
(c) $\frac{n+1}{2}$ (d) $\frac{n}{2}$

68. A man purchases black pencils worth ₹ 100 at the rate of ₹ 5 per pencil, red pencils worth ₹ 100 at the rate of ₹ 10 per pencil and blue pencils worth ₹ 100 at the rate of ₹ 20 per pencil. The average cost of one pencil is:

(a) ₹ 10 (b) ₹ (60/7)

(c) ₹ (35/3) (d) None of these.

69. The mean of series $x_1, x_2, \ldots \ldots x_n$ is $\overline{X}$. If x_2 is replaced by λ, then the new mean is:

(a) $\overline{X} - x_2 + \lambda$ (b) $(\overline{X} - x_2 - \lambda)/n$

(c) $[(n-1)\overline{X} + \lambda]/n$ (d) $[n\overline{X} - x_2 + \lambda]/n$

70. Coefficient of Quartile Deviation= (Quartile Deviation x 100) / Median

(a) True (b) false

(c) both (d) None of these.

71. The quartile deviation of daily wages (in ₹) of 7 persons 12, 7, 15, 10, 17, 19, 25 is:

(a) 14.5 (b) 5

(c) 9 (d) 4.5

72. If x and y are related by $y = 2x + 5$ and the S.D. and A.M. 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. If the amount of change in one variable tends to bear a constant ratio to the amount of change in the other variable, then correlation is said to be:

(a) nonlinear (b) linear

(c) Both (a) and (b) (d) None of these.

74. In case the correlation coefficient between two variables is 1, the relationship between the two variables would be:

(a) $y = a + bx, b < 0$

(b) $y = a + bx, b > 0$

(c) $y = a + bx$

(d) $y = a + bx$, both a and b being positive.

75. The Cov (x, y) for the following data:(x, y) : (1, 5), (2, 4), (3, 3) (4, 2), (5, 1) is:

(a) 2 (b) -2

(c) 3 (d) -3.

76. If X and Y are two independent variables with mean 5 and 10 and variances 4 and 9 respectively. If U = 6X + 4Y and V = 6X - 4Y, then, r(U, V) is equal to:

(a) 0 (b) 1

(c) -1 (d) 0.5

77. The coefficient of concurrent diviation is given by:

(a) $\sqrt{\frac{n-2c}{n}}$ (b) $-\sqrt{\frac{2c-n}{n}}$

(c) $-\sqrt{\frac{n-2c}{n}}$ (d) None of these.

78. The sum of the squares of difference in the ranks of 18 students in two subjects is 46, then the value of rank correlation is:

(a) 0.62 (b) 0.72

(c) 0.82 (d) 0.52

79. Since the correlation coefficient $\boldsymbol{r}$ cannot be greater than 1 numerically, the product of the regression must:

(a) not exceed 1 (b) exceed 1

(c) be zero (d) None of these.

80. If X is changed to $a + hU$ and Y is changed to $b + kV$, then the regression coefficients b_{xy} and b_{UV} are such that:

(a) $kb_{XY} = hb_{UV}$ (b) $hb_{XY} = kb_{UV}$

(c) $b_{XY} = b_{UV}$ (d) None of these.

81. Coefficient of correlation is :

(a) G.M. of the coefficient of regression

(b) A.M. of the coefficient regression

(c) H.M. of the coefficient of regression

(d) Product of G.M. and A.M. of the regression coefficients.

82. According to the statistical definition of probability, the probability of an event *A* is the

(a) limiting value of the ratio of the number of times the event A occurs to the number of times the experiment is repeated

(b) the ratio of the frequency of the occurrences of A to the non-occurrence of A

(c) the ratio of the frequency of the occurrences of A to the total frequency

(d) the ratio of the favourable elementary events to A to the total number of elementary events.

83. If a coin is tossed twice, then the events "occurrence of one head', 'occurrence of 2 heads' and 'occurrence of no head are:

(a) equally likely (b) independent

(c) not equally likely (d) Both (a) and (b).

84. Suppose E and F are two events of a random experiment. If the probability of occurrence of E is 1/5 and the probability of occurrence of F given E is 1/ 10, then the probability of non-occurrence of at least one of the events E and F is :

(a) $\frac{1}{18}$ (b) $\frac{1}{2}$

(c) $\frac{49}{50}$ (d) $\frac{1}{50}$

85. If A and B are two independent events such that P(B) = 2/7, $P(A \cup B^c) = 0.8$, then P(A) =

(a) 0.1 (b) 0.2

(c) 0.3 (d) 0.4

86. A number of 4 different digits is formed by using 1, 2, 3, 4, 5, 6, 7. Find the probability that it is divisible by 5.

(a) $\frac{1}{4}$ (b) $\frac{1}{5}$

(c) $\frac{1}{6}$ (d) $\frac{1}{7}$

87. What is the probability that four S's appear consecutively in the word MISSISSIPPI assuming that the letters are arranged at random?

(a) 8/165 (b) 4/165

(c) 2/33 (d) None of these.

88. A firm plans to bid ₹ 300 per tonne for a contract to supply 1,000 tonnes of metal. It has two competitors A and B and it assumes that the probability that A will bid less than ₹ 300 per tonne is 0.3 and that B will bid less than ₹ 300 per tonne is 0.7. If the lowest bidder gets all the business and the firm's bid independently, what is the expected value of the contract to the firm?

(a) ₹ 63,000 (b) ₹ 27,000

(c) ₹ 1,47,000 (d) ₹ 2,37,000

89. The important characteristic(s) of Bernoulli trials is :

(a) trials are independent.

(b) each trial is associated with just two possible outcomes.

(c) trials are infinite.

(d) both (a) and (b).

90. In Poisson distribution, probability of success is very close to:

(a) -1 (b) 1

(c) 0 (d) None of these.

91. A random variable has the following distribution:

$X(=x_i)$	1	2	3	4
$P(X=x_i)$	k	$2k$	$3k$	$4k$

The values of k and $P(X<3)$ are equal to:

(a) k = 1/10, P(X< 3) = 3/5

(b) k= 1/10, P(X< 3) = 3/10

(c) k= 3/10, P(X< 3) = 1/10

(d) k= 1/10, P(X< 3) = 5/12.

92. Two dice are thrown. Find the probability that exactly two times two 2's are obtained in 5 independent trials.

(a) $10 \times (35)^3 \times (6)^{-10}$ (b) $(35)^3 \times (6)^{-10}$

(c) $10 \times (35)^4 \times (6)^{-10}$ (d) None of these.

93. One-fifth per cent of the blades produced by a blade manufacturing factory turn out to be defective. The blades are supplied in packets of 10. Use Poisson distribution to calculate the approximate number of packets containing two defective blades respectively in a consignment of 1,00,000 packets. [Given: $e^{-0.02} = 0.9802.$]

(a) 30 (b) 20

(c) 10 (d) 15.

94. Incomes of a group of 10,000 persons were found to be normally distributed with mean ₹ 520 and standard deviation ₹ 60. Find the lowest income of the richest 500.

[For a standard normal variate Z the area under the curve between Z = 0 and Z = 0.5 is 0.19146; The area between Z = 0 and Z = 1.645 is 0.45000 and the area between Z = 0 and Z = 2 is 0.47725.]

(a) ₹ 518.70 (b) ₹ 618.70

(c) ₹ 718.70 (d) ₹ 750.70.

95. "Neither Laspeyre's formula nor Paasche's formula obeys":

(a) Time Reversal and Factor Reversal Tests of index numbers.

(b) Time Reversal and Unit Test of index number.

(c) Unit Test and Circular Tests of index number.

(d) None of these.

96. The cost of living index (C.L.I.) is always:

(a) Weighted index (b) Quantity index

(c) Price index (d) None of these.

97. A worker earned ₹ 900 per month in 1990. The cost of living index increased by 70% between 1990 and 1993. How much extra income should the worker have earned in 1993 so that he could buy the same quantities as in 1990?

(a) ₹ 7460 (b) ₹ 9460

(c) ₹ 7560 (d) ₹ 8464.

98. Find the trend value of the year 3 using three year weighted moving average with weights 1,2,1.

Years	1	2	3	4	5	6	7
Values	2	4	5	7	8	10	13

(a) 4.7 (b) 15/4

(c) 18/4 (d) 21/4

99. Indicate which of the following an example of seasonal variations is

(a) Death rate decreased due to advance in science is:

(b) The sale of air condition increases during summer

(c) Recovery in business

(d) Sudden causes by wars

100. Calculate trend value by semi average method for the data?

Year	1991	1992	1993	1994	1995	1996	1997
Value ('000 ₹)	123	140	110	98	104	133	95

(a) 120, 123 (b) 124.33, 110.66

(c) 123.45, 345 (d) None of these.