

JKN\_QA\_03

Group A – Business Mathematics  
40 Questions 40 Marks

1. If  $A^X = B$ ,  $B^Y = C$  and  $C^Z = A$ ; and  $A \neq 0$ , Find the value of  $(XYZ)^{XYZ}$ .
  - a) -1
  - b) 1
  - c) 4
  - d) None of the above
  
2. Let  $X = [\text{Log}_9 32 / \text{Log}_5 27] \div [\text{Log}_3 32 / \text{Log}_5 27]$ , find the value of  $(2X - 1)$ .
  - a) 1
  - b) -1
  - c) 2
  - d) 0
  
3. In a business A and B invested amounts in the ratio 3:4, whereas the ratio between amounts invested by A and C was 6:7. If Rs. 106,501.50 was their profit, how much amount did B receive?
  - a) Rs. 34,630
  - b) Rs. 35,500
  - c) Rs. 30,450
  - d) Rs. 40,572
  
4. A and B are the roots of the equation  $X^2 - 7X + 10 = 0$ . Which of the following cubic equation have the roots A, B and  $(A + B)$ ?
  - a)  $X^3 - 4X^2 + 59X - 70 = 0$
  - b)  $2X^3 - 14X^2 + 59X - 70 = 0$
  - c)  $X^3 - 14X^2 + 59X - 70 = 0$
  - d)  $X^3 - 7X^2 + 49X - 70 = 0$
  
5. What is the number which has the same ratio to 39 that 7 has to 13?
  - a) 21
  - b) 13
  - c) 26
  - d) 28

6. Two numbers  $X$  and  $4$  are such that  $(X + 9)$ ,  $(X - 6)$  and  $4$  are in geometric progression. Find the number of factors of  $X$ .
- 5
  - 7
  - 8
  - 4
7. If one root of the equation  $Ax^2 + 5x + 4 = 0$  be reciprocal of another root, find the value of  $A^2 + A + 1$ .
- 21
  - 31
  - 13
  - 28
8. The sum of  $18^{\text{th}}$  and  $19^{\text{th}}$  term of an Arithmetic Progression is  $14400$ . What is the sum of the first  $26$  terms of the same arithmetic progression?
- 250000
  - 187200
  - 180000
  - 157200
9. Given  $x$  is real, find the range in which  $x$  lies such that  $(x^2 + 5x - 24) / (2x^2 - 5x - 3) < 0$ .
- $\frac{1}{2} < x < 8$
  - $-8 < x < 2$
  - $-8 < x < -\frac{1}{2}$
  - None of the above
10. Mr. X deposited equal amount of money with two banks paying same simple interest per annum. He received Rs.  $11,800$  from the first bank in  $3$  years and Rs.  $13,000$  from the second bank in  $5$  years. How much does he invested in both the banks together?
- Rs.  $10,000$
  - Rs.  $20,000$
  - Rs.  $24,800$
  - Rs.  $14,800$
11. A man constructed a building worth Rs.  $13,31,000$  and purchased a land worth Rs.  $7,29,000$ . Land appreciates at  $10\%$  per annum compounding and Building depreciates at  $10\%$  per annum compounding. After how many years will the value of both be same?
- 2 years
  - 2.5 years
  - 3 years
  - 3.5 years

12. If the difference between compound interest and simple interest on a certain sum of money for 3 years at 5% per annum is Rs. 122, what would be the amount after 4 years if the money is invested at simple interest of 5% per annum?
- Rs. 16000
  - Rs. 20000
  - Rs. 8400
  - Rs. 19200
13. Cost of 1 Kg X and 1 Kg Y together is Rs. 95. If the price of X falls by 10% and that of Y increases by 20%, then the combined price of 2Kgs each comes to Rs. 180. What is the difference between the 1 Kg price of X and Y?
- Rs. 80
  - Rs. 15
  - Rs. 65
  - Rs. 75
14. A person aged 19 years leaves the group of X persons, whose average age before he leaves was Y years. Just when he left, another person aged 59 years joined the group and due to his joining, the average age of the group now increases by 10 years. Find 'X'.
- 5
  - 6
  - 3
  - 4
15. A group of 52 students like playing one or more than one sports, namely, Cricket, Hockey and Football. 24 students like playing Cricket and an equal number of students like playing Hockey. 35 students like playing Football. 13 people like playing exactly two of the three sports. If One-third of the students liking all the three sports, decide to part away with one of their liking towards any of the sports, how many students would have liked exactly two sports?
- 15
  - 16
  - 13
  - None of the above
16. X litres of milk were drawn off from a 54 litres vessel full of milk and equal amount of water is added. Again the same volume of the mixture was drawn off and replaced by water. As a result, the vessel contained 24 litres of pure milk. How much milk was drawn off initially?
- 18 litres
  - 20 litres
  - 16 litres
  - None of the above

17. A milkman carries a vessel full of milk. The capacity of the vessel is 40 Litres. He delivers 10 L to the first house, and adds an equal volume of water in it. At the second house and the third house, he does the same thing. What is the ratio of water and milk when he has finished delivering at the third house?
- 27 : 37
  - 27 : 64
  - 37 : 27
  - None of the above
18. In how many ways letters P P P P P Q Q R R R S T U be arranged in a row, such that letters R are separated from one another?
- 9134050
  - 9135040
  - 9234070
  - None of the above
19. Ten candidates are attending a group discussion session. They are divided into two groups of size 4 and 6 respectively and are made to sit around two circular tables, accommodating 4 persons and 6 persons. In how many ways can the candidates settle themselves down for the group discussion?
- $10! / 24$
  - $10!$
  - $11! / 24$
  - None of the above
20. A and B start their cars together in the same direction from the same place. A goes with uniform speed of 10 kmph. B goes at a speed of 8 kmph in the first hour and increases the speed by  $\frac{1}{2}$  km each succeeding hour. After how many hours will B's car overtake the A's car, if both cars go non-stop?
- 8 hours
  - 9 hours
  - 7.5 hours
  - None of the above
21. One side of an equilateral triangle is 36 cm. The mid-points of the sides are joined to form another triangle, whose mid points, in turn, are joined to form still another triangle. The process is continued indefinitely. Find the sum of the perimeters of all triangles thus formed.
- 200 cms
  - 612 cms
  - 216 cms
  - None of the above

22. How many signals can be made by hoisting 4 flags of different color one above the other when any number of them may be hoisted at a time?
- a) 16
  - b) 15
  - c) 63
  - d) 64
23. Given 5 different green dyes, 4 different blue dyes, 3 different red dyes, how many combinations of dyes can be chosen taking at least 1 green and 1 blue dye?
- a) 1860
  - b) 3720
  - c) 1859
  - d) 3719
24. In a railway compartment there are 2 rows of seats facing each other with accommodation for 5 in each. 4 wish to sit facing forward and 3 facing towards the rear while 3 others are indifferent. In how many ways can the 10 passengers be seated?
- a) 43200
  - b) 21600
  - c) 14400
  - d) 625
25. The sum of three numbers X, Y and Z is 24 and their product is 440. Find X + Y, if  $2Y = X + Z$ .
- a) 15
  - b) 12
  - c) 19
  - d) 10
26. Tina invested Rs. 25,000 with an investment bank for 3 years at 12% compound interest per annum. What is the interest she received in the third year?
- a) Rs. 3600.50
  - b) Rs. 3763.20
  - c) Rs. 3685.45
  - d) Rs. 3987.56
27. Find x and y, if matrix A has x rows and x + 5 columns, matrix B has y rows and 11 – y columns and both AB and BA exist.
- a) 3, 8
  - b) 8, 3
  - c) 3, 3
  - d) 8, 4

28. If matrix  $A = \begin{bmatrix} 5 & 3 & 1 \\ 2 & -1 & 2 \\ 4 & 1 & 3 \end{bmatrix}$  then the value of the equation  $A^3 - 7A^2 - 5A$  is:

- a) 0
- b) I
- c)  $-13I$
- d)  $7I$

29. Given  $A = \begin{pmatrix} 1 & -1 & 1 \\ 0 & 2 & 1 \end{pmatrix}_{2 \times 3}$ ;  $B = \begin{pmatrix} 1 & -1 & 0 \\ 0 & 1 & -1 \\ 1 & 1 & 1 \end{pmatrix}_{3 \times 3}$ ;  $C = \begin{pmatrix} 1 & 0 \\ 0 & 1 \\ 1 & 1 \end{pmatrix}_{3 \times 2}$ , then which of the following is true?

- a)  $(AB)C = AC$
- b)  $AC = A(BC)$ .
- c)  $(AB)C = A(BC)$ .
- d)  $(AB) = A(BC)$ .

30. Moi plans to send his son for higher studies abroad after 10 years. He expects the cost of these studies to be Rs. 100000. How much should he save at the beginning of each year to have a sum of Rs. 100000 at the end of 10 years, if the interest rate is 12% compounded annually? Given  $(1.12)^{11} = 3.4785495$ .

- a) Rs. 5,000
- b) Rs. 4,800
- c) Rs. 4,268
- d) Rs. 5,088

31. A man borrows Rs. 20000 at interest rate 4% p.a. compounded annually and agrees to pay both the principal and interest in 10 equal annual instalments at the end of each year. Find the amount of these instalments. Given  $\log 104 = 2.0170$  and  $\log 6761 = 3.8300$ .

- a) Rs. 2500
- b) Rs. 2400
- c) Rs. 2470
- d) Rs. 2740

32. Evaluate:  $\int e^{5 \log_e x} dx$

- a)  $6 \log x + C$
- b)  $e^6 + C$
- c)  $x^6/6 + C$
- d)  $x^5/5 + e^x + C$

33. If  $y = 2x^3 + 3x^2 - 36x - 70$ , what is the value of  $x$  for which  $d^2y/dx^2 = 0$ ?
- $\frac{1}{2}$
  - $-\frac{1}{2}$
  - 1
  - 1
34.  $Y = x^3 - 2kx^2 - 4x - 5$ . What is the value of  $k$ , for which  $dY/dx$  at  $x=2$  is 0?
- 0
  - 1
  - 2
  - 4
35. If  $x = 2bt$  and  $y = bt^2$ , ( $t$  is the parameter and  $b$  is any arbitrary constant), what is the value of  $dy/dx$ ?
- $t$
  - $t^2$
  - $bt$
  - $b$
36. The demand function of a commodity is given by  $x = 20 - 2p$ , where  $x$  = units demanded &  $p$  = price per unit. Calculate the price elasticity of demand when price ( $p$ ) = Rs.  $P$  per unit.
- 0.25
  - 0.25
  - 0.75
  - 0.67
37. Find the sum of maximum and minimum values of  $f(x) = 4x^3 + 19x^2 - 14x + 3$ .
- 12295 / 108
  - 12259 / 27
  - 12295 / 27
  - 19225 / 108
38. Integrate:  $\int_2^3 \frac{\sqrt{x}}{\sqrt{5-x} + \sqrt{x}} dx$
- 1
  - 0.5
  - 2.5
  - None of the above

39. Integrate:  $\int \frac{x^3 + 4x^2 - 3x - 2}{x + 2} dx$

- a)  $\frac{1}{3}x^3 + x^2 - 7x + 12\log|x+2| + C$
- b)  $\frac{1}{3}x^3 + \frac{1}{2}x^2 - 7x + 12\log|x+2| + C$
- c)  $\frac{1}{3}x^3 + \frac{1}{2}x^2 - 7x + 2\log|x+2| + C$
- d) None of the above

40. Find  $\frac{d^2y}{dx^2}$  of the function:  $x = ct, y = \frac{c}{t}$ , at  $t = \frac{1}{2}$

- a)  $8/c$
- b)  $16/c$
- c)  $c/8$
- d)  $16c$

**Group B – Logical Reasoning**  
**20 Questions 20 Marks**

41. 'A + B' means 'A is the father of B', 'A – B' means 'A is the wife of B', 'A \* B' means 'A is the brother of B', 'A / B' means 'A is the daughter of B'. If S / T \* U + Z, which of the following is true?
- a) S is the daughter of Z
  - b) Z is the aunt of S
  - c) S is the cousin of Z
  - d) S is the mother of Z
42. A, B, C, D, E and F are six friends standing in a row. C does not stand next to D. E stands between A and C. B is standing between D and F. A does not stand next to either D or F. Who two friends occupy the extreme ends of the row?
- a) F and A
  - b) E and B
  - c) E and D
  - d) A and D
43. The letters P, Q, R, S, and T each stands for one of 1, 2, 3, 4, and 5 but not necessarily in that order. P is odd, Q is neither 4 nor 5, R is 1, S is either 4 or 5, T is neither 2, 3 nor 4. The correct order of the digits (according to the correct order of the English alphabet) is:
- a) 34125
  - b) 52143
  - c) 32145
  - d) 54123

44. In a certain BRAHMI CODE language "43" means "tell me" and "684" means "stay with me". What is the code for "me" in that language?
- 3
  - 4
  - 6
  - 8
45. Showing the lady in the park, Vineet said to his girlfriend Shivani, "Look Shivani, that girl is the daughter of my grandfather's only son." How is Vineet related to that lady in the park?
- Uncle
  - Brother
  - Father
  - Cousin
46. In the "Brahm-Lipi" alphabet all the letters of the English alphabet are used differently. The letters are replaced by their respective positions in the alphabetical order. Thus A is 1, B is 2, etc. Also a space between words is denoted by 0. Then how will the phrase "I Like You" be written in "Brahm-Lipi" language?
- 901291250051121
  - 901291150251521
  - 901291150251251
  - 901291250252251
47. Dipti forgot the way while going to her uncle's house. She went 2 km south, then turning right went 2 km west. She then turned right and walked 3 km, then turned right and walked 1 km and reached to her uncle's house. How far is uncle's house from Dipti's house?
- 1 km
  - $\sqrt{2}$  km
  - 2 km
  - 7 km
48. Complete the series: 2, 5, 14, 41, 122, .....
- 354
  - 365
  - 368
  - 375

49. Complete the series: 15, 16, 34, 105, \_\_\_\_, 2125
- 10
  - 340
  - 424
  - 494
50. Six girls A, B, C, D, E and P are standing in a row. Study the following standing arrangement pattern and find who two girls occupy the extreme ends of the row?
- E stands between A and C.
  - B is standing between D and P.
  - C does not stand next to D.
  - A does not stand next to either P or D.
- A and P
  - B and E
  - D and E
  - D and A
51. Which of the following statement/(s) follow from the premises:  
A is elder to S. S is younger to AA.
- A is elder to AA
  - AA is elder to A
  - A and AA are of same age
- Only I
  - Only II
  - Only III
  - No conclusion can be drawn
52. The following question has a capitalized word followed by four numbered answer choices. Choose the answer, which does not correspond with the capitalized word.
- TYPEWRITER
- Space-bar
  - Keys
  - Roller
  - Screen
53. In the following question, a set of four words is given. Three of the words are related in some way, the remaining word is not related to the rest. Pick the word which does not fit in the relation and mark that as your answer.
- Pneumonia
  - Influenza
  - Mania
  - Cholera

54. Find the odd man out, from the following four options.
- a) 21
  - b) 31
  - c) 41
  - d) 51
55. C is B's sister. A is B's son. C has a son D. E is daughter of C. F is the maternal uncle of E. How many nephews does F have?
- a) 3
  - b) 0
  - c) 2
  - d) 1
56. A is the brother of B, C is the brother of A.  
To establish a relationship between B and C, which of the following information is required?
- (I) Gender of C
  - (II) Gender of B
- a) Only I is required
  - b) Only II is required
  - c) Both I & II are required
  - d) Neither I nor II is required
57. Read the following statements and the four conclusions and answer which of the conclusions follow:
- Statements:
- A. All flowers are buds.
  - B. Some buds are plants.
- Conclusions:
- I. Some plants are flowers.
  - II. No plant is a flower.
  - III. All flowers are plants.
  - IV. All buds are plants.
- a) Neither I nor II follows
  - b) I, II and III follows
  - c) Either I or II follow
  - d) II, III and IV follows
58. In the following question, two statements are given and these statements are followed by two conclusions numbered I and II. You have to take the given two statements to be true. Read the conclusions and then decide which of the given conclusions logically follows from the given two statements.

Statements:

All the actors are male.

All male are handsome.

Conclusions:

I. All the actors are handsome.

II. Some males are actors.

a) Either I or II follows

b) Only II follows

c) Both I and II follows

d) Neither I nor II follows

59. In an Exhibition seven cars of different companies – A, A, F, M, E, B and G are standing facing to east in the following order –

C is next to right of G. G is fourth to the right of F. M is between A and B. F which is third to the left of A, is at one end.

Which of the cars are on both the sides of C's car?

a) G and E

b) A and G

c) M and F

d) A and M

60. In the following question two statements are given and these statements are followed by four conclusions numbered I, II, III and IV. You have to take the given two statements to be true. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

Statements: All the P are S. All the S are C.

Conclusions:

I. All the C are S

II. All the P are C

III. All the S are P

IV. Some C are P

a) Only II and III

b) Only I and IV

c) Only II and IV

d) Only I, II and IV

**Group C – Statistics**  
**40 Questions 40 Marks**

61. In an un-weighted average of relatives index,  $(P_1 / P_0) \times 100$  is calculated for each product in the composite. What is then done with these values to finish the calculation?
- The largest value is found
  - The values are multiplied together
  - The average difference from the median of the values is found and then squared
  - None of the above
62. If class intervals are 15 – 20, 20 – 25, 25 – 35, 35 – 40, 40 – 50; then in which class interval 25 will come?
- 15 – 20
  - 20 – 25
  - 25 – 35
  - Both b) & c) above
63. The data given as 8, 14, 20, 26, 32, 38, 44, 50, 56, 62, 68, 74; will be called as:
- a time series
  - an individual series
  - a discrete series
  - a continuous series
64. Match the items on List I with that on List II:
- | List I                | List II             |
|-----------------------|---------------------|
| (A) Histogram         | (i) Class Interval  |
| (B) Frequency Polygon | (ii) Upper – Limit  |
| (C) Less than Ogive   | (iii) Lower – Limit |
| (D) More than Ogive   | (iv) Mid – Value    |
- (A – i), (B – iv), (C – iii), (D – ii)
  - (A – iv), (B – i), (C – ii), (D – iii)
  - (A – i), (B – iv), (C – ii), (D – iii)
  - (A – iv), (B – i), (C – iii), (D – ii)
65. Which of the following is NOT the source of secondary data?
- Data published in newspapers
  - Data published by World Bank
  - The data collected by a firm in a market survey conducted by it
  - Publications of Central and State Governments

66. Two variables X and Y are related as  $Y = 2X$ , and the harmonic mean of Y is 14, find the harmonic mean of X.
- 7
  - 14
  - 28
  - None of the above
67. Which of the following is the first step in calculating the median of a data set?
- Determine the relative weights of the data values in terms of importance
  - Average the middle two values of the data set
  - Array the data
  - None of the above
68. The mode has all of the following disadvantages, except:
- A data set may have no modal value
  - The mode is unduly affected by extreme value
  - Every value in the data set may be a mode
  - A multi-modal data set is difficult to analyze
69. A man travels from Delhi to Agra at an average speed of 60 km per hour and returns at an average speed of 30 km per hour. What is his average speed over the journey?
- 45 km per hour
  - 48 km per hour
  - 40 km per hour
  - 42.5 km per hour
70. What is the formula to calculate middle 70% Range?
- $Q_3 - Q_1$
  - $P_{90} + P_{20}$
  - $D_9 - D_1$
  - $P_{90} - P_{20}$
71. Find the Quartile Deviation of the series: 1, 6, 3, 4, 5, 10, 6.
- 1.5
  - 2.0
  - 1.1
  - 0.3

72. For a distribution; Number of data = 100, Mean = 60 and Standard Deviation = 5. Find the Sum of Squares of the data in the said distribution.
- a) 360,000
  - b) 362,500
  - c) 2,500
  - d) 6,000
73. Calculate the Mean Absolute Deviation of the following distribution:
- |    |    |    |    |    |    |
|----|----|----|----|----|----|
| X: | 14 | 13 | 11 | 10 | 12 |
| F: | 3  | 12 | 12 | 3  | 18 |
- a) 0.75
  - b) 1.25
  - c) 1.75
  - d) None of the above
74. If standard deviation of 10 items, whose sum is 160, is 4; find its coefficient of variation.
- a) 16%
  - b) 25%
  - c) 40%
  - d) 20%
75. What is spurious correlation?
- a) It is a very low correlation between two variables
  - b) It is a bad relation between two variables
  - c) It is the correlation between two variables having no casual relation
  - d) None of the above
76. Two sets of candidates are competing for the positions on the board of directors of a company. The probabilities that the first and second sets will win are 0.6 and 0.4 respectively. If the first set wins, the probability of introducing a new product is 0.8, and the corresponding probability if the second set wins is 0.3. What is the probability that the new product will be introduced?
- a) 0.50
  - b) 0.60
  - c) 0.65
  - d) 0.85

77. The probability distribution of a random variable  $x$  is as follows:

X:	1	- 2	3
P(X):	1/6	1/3	1/2

Find  $E(2X + 5)$

- a) 5
- b) 6
- c) 7
- d) None of the above

78. The odds in favour of Amit speaking truth is 3:2 and odds against of Vinod speaking truth is 1:3. What are the odds in favour of cases where Amit and Vinod are likely to contradict each other in narrating the same incidence?

- a) 11 : 9
- b) 9 : 11
- c) 10 : 10
- d) 13 : 7

79. For determining correlation between two attributes, we consider:

- a) Scatter diagram
- b) Co-efficient of Concurrent Deviations
- c) Spearman's Rank Correlation Coefficient
- d) Pearson's Correlation Coefficient

80. D Company estimates the net profit on a new product it is launching to be Rs. 300,00,000 during the first year if it is successful; Rs. 100,00,000 if it is moderately successful; and a loss of Rs. 100,00,000 if it is unsuccessful. The firm assigns the following probabilities to first year for the product – Successful – 0.15 and Moderately Successful – 0.25. What is the expected value?

- a) Rs. 1,00,000
- b) Rs. 10,00,000
- c) Rs. 1,48,000
- d) Rs. 14,80,000

81. An unbiased coin is tossed. If "Heads" appear 2 unbiased dice are rolled and sum of the numbers appearing on the two dice is noted. If "Tails" appear then a card is drawn from a well shuffled pack of number cards and the number is noted. What is the probability that the number thus noted is 7 or 8?

- a)  $19/72$
- b)  $287/936$
- c)  $1/2$
- d)  $23/72$

82. The correlation coefficient between two variables  $X$  and  $Y$  is 1. Which of the following represents the linear relationship between the variables  $X$  and  $Y$ ?
- $Y = A + BX$
  - $Y = A + BX, B > 0$
  - $Y = A + BX, B < 0$
  - $Y = (A + B)X$
83. Dipti picks 7 different numbers from a set of numbers  $S = \{1, 2, 3, 4, 5, 8, 9, 12, 14, 15, 17\}$  and arrange them in ascending order. What are the chances that the second smallest number is 8?
- $1 / 55$
  - $1 / 66$
  - $4 / 55$
  - $5 / 66$
84. Bag 1 contains 3 red and 2 blue balls. Bag 2 contains 1 red and 4 blue balls. A ball is selected from one of the two bags, and found to be blue. Find the probability that it was drawn from Bag 2.
- $3/5$
  - $2/3$
  - $2/5$
  - None of the above
85.  $X$  and  $Y$  are two variables, such that the fraction of variation in  $Y$  that is unexplained by the independent variable  $X$  is 0.25. Then  $r^2 = ?$
- 0.5625
  - 0.75
  - 0.866
  - None of the above
86. The two regression lines are  $3x = 4y$  and  $y = 3x$ . If standard deviation of  $x$  is 2, find the standard deviation of series  $y$ .
- 2
  - 3
  - 3.5
  - 0.75
87. If each of  $X$  variate is divided by 5 and each of  $Y$  variate is divided by 10, then by coded values  $b_{YX}$  is:
- Same as  $b_{YX}$
  - Double of  $b_{YX}$
  - Half of  $b_{YX}$
  - None of the above

88. The correlation coefficient between heights and weights of 10,000 students in a college is 0.83, when heights and weights are expressed in inches and in Kgs respectively. If heights and weights are expressed in cms and in pounds respectively, the correlation coefficient will be:
- Data Irrelevant
  - No change in the value of correlation coefficient
  - Can't be calculated
  - None of the above
89. For a binomial distribution with parameters  $n$  and  $p$ ; mean = 4; variance =  $4/3$ . Find  $P(x > 5)$ .
- 0.0877
  - 0.0027
  - 0.0533
  - 0.0787
90. The number of accidents in a year attributed to auto drivers in New Delhi follows Poisson Distribution with mean 3. Out of 10,000 auto drivers, the number of drivers with no accident in a year is: (Given  $e^{-3} = 0.0498$ )
- 300
  - 400
  - 500
  - None of the above
91. A dealer in television sets estimates from his past experience the probabilities of his selling television sets in a day. These are given below:
- |                                       |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|
| No. of television sets sold in a day: | 0    | 1    | 2    | 3    | 4    | 5    | 6    |
| Probability:                          | 0.02 | 0.10 | 0.21 | 0.32 | 0.20 | 0.09 | 0.06 |
- Find the standard deviation of the number of television sets sold.
- 1.87
  - 1.36
  - 1.63
  - 1.78
92. Which of the following is TRUE for Standard Normal Distribution?
- Mean = 1, Standard Deviation = 1
  - Mean = 0, Standard Deviation = 1
  - Mean = 1, Standard Deviation = 0
  - None of the above

93. The number of methods for fitting the normal curve is:
- a) One
  - b) Two
  - c) Three
  - d) None of the above
94. The probability density function of a continuous random variable  $x$  is defined as:
- $$f(x) = \begin{cases} K & \text{when } -1 \leq x \leq 1 \\ 0 & \text{otherwise} \end{cases}$$
- Find the value of  $K$ .
- a) 1
  - b) 0.5
  - c) 0
  - d) None of the above
95. For a discrete probability distribution where  $x = 1, 2, 3, \dots, n$  with probability mass function  $f(x) = 1/n$ , find the mean of the distribution.
- a)  $n$
  - b)  $n/2$
  - c)  $(n+1)/2$
  - d)  $(n-1)/2$
96. For Bernoulli Distribution with probability  $P$  of a success and  $Q$  of a failure, the relation between mean and variance that holds is:
- a) Mean = Variance
  - b) Mean < Variance
  - c) Mean > Variance
  - d) Mean  $\leq$  Variance
97. For a binomial distribution,  $n = 4$  and  $P(x = 2) = 3 P(x = 3)$ . What is the value of probability of success ( $p$ )?
- a)  $1/9$
  - b)  $1/4$
  - c)  $1/3$
  - d)  $1/16$

98. "Index numbers are pointers and instructions pyramid on the path of business." This statement has been made by:
- a) Fisher
  - b) Paasche
  - c) Kelly
  - d) Laspeyre
99. Which of the following normal curves look most like the curve for Mean = 10, Standard Deviation = 5 ?
- a) Curve for Mean = 10, Standard Deviation = 10
  - b) Curve for Mean = 20, Standard Deviation = 10
  - c) Curve for Mean = 20, Standard Deviation = 5
  - d) None of the above
100. Which of the following is/are necessary condition(s) for use of Poisson Distribution?
- a) The probability of two or more arrivals in the same time is zero.
  - b) Probability of one arrival per time period is constant.
  - c) The number of arrivals in any one time period interval is independent of arrivals in other intervals.
  - d) All of the above