Roll No. .....

Total No. of Questions : 9] [Total No. of Printed Pages : 8

(2111)

BCA (CBCS) RUSA Vth Semester Examination

4522

COMPUTER ORIENTED STATISTICAL METHODS

BCA–0505

Time : 3 Hours] **[Maximum Marks : 70**

Note :– Section–I is compulsory. Attempt *one* question from each part of Section–II. Marks are indicated against the question.

Section–I

(Compulsory Question)

1. (A) Do as directed the following questions :

(i) The mean of 8, 11, 6, 14, x and 13 is 66. Find the value of the observation x.

(ii) If covariance between X and Y variables is 10 and the variances of X and Y are respectively 16 and 9, find the coefficient of correlation.

Turn Over

(iii) Does the following data have model weight of 8 students :

Weight : 1, 7, 2, 4, 5, 9, 8, 3.

(Yes/No)

(iv) What is the probability of picking a red or black card from a standard pack of 52 cards ?

(v) A fair die is tossed. Find the probability of getting a 4, 5 or 6 on the toss ?

(vi) A dealer in computers estimates from his past experience the probabilities of selling computers in a day, which are as follows :

No. of Computers	Probability
0	0.03
1	0.20
2	0.23
3	0.25
4	0.12
5	0.10
6	0.07

Find the expected value of computers sold in a day.

(vii) The range of a sample gives an indication of the :

(a) Way in which the values cluster about a particular point

(b) Number of observations bearing the same value

(c) Maximum variation in the sample

(d) Degree to which the mean value differs from its expected value

(Choose the correct one)

(viii) The median of the sample 5, 5, 11, 9, 8, 5, 8 is :

(a) 5

(b) 6

(c) 8

(d) 9

(Choose the correct one)

(ix) Define coefficient of variance.

(x) The coefficient of correlation lies between :

(a) 0 and +1

(b) −1 and 0

(c) −1 and +1

(d) 0 and −0.5 (Choose the correct one)

(B) (i) Define mutually exclusive and equally likely events. 1×10=10

(ii) Define geometric mean and its properties in short.

(iii) Write in short merits and demerits of mean deviation.

(iv) Explain briefly assumed Mean method for calculating standard deviation in discrete series.

4×5=20

Section–II

(Part–A)

2. Calculate Mean and Mode from the following data :

Marks above	No. of Students
10	77
20	72
30	65
40	55
50	43
60	28
70	16
80	10
90	8

10

3. Find Median and Standard Deviation from the following data :

x	f
0—10	12
10—20	17
20—30	23
30—40	39
40—50	16
50—60	03

10

(Part–B)

4. (a) If n persons are seated on n chairs at a round table, then find the probability that two specified persons are sitting next to each other.

(b) If 10 men, among whom are A and B, stand in a row, what is the probability that there will be exactly 3 men between A and B ? 5×2=10

5. (a) A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the number of the ball drawn will be a multiple of 5 or 7.

(b) Find the probability of drawing a queen, a king or an ace in that order from a pack of cards in three consecutive draws, the cards drawn not being replaced. 5×2=10

(Part–C)

6. (a) A petrol pump proprietor sells on an average ₹ 80,000 worth of petrol on rainy days and an average of ₹ 95,000 on clear days. Statistics from Meteorological Dapartment show that the probability is 0.76 for clear weather and 0.24 for rainy weather on coming Monday. Find the expected value of petrol sale on coming Monday.

(b) A committee consisting of 2 computer analysts and 3 statisticians is to be formed, out of 5 computer analysts and 7 statisticians. In how many ways this can be done if (i) any computer analyst and any statistician can be included, (ii) one particular statistician must be on the committee. 5×2=10

7. Two cards are drawn (without replacement) from a well shuffled deck of 52 cards. Find the probability distribution and mean of number of cards numbered 4. 10

(Part–D)

8. Calculate coefficient of Karl Pearson's correlation of the following data :

Cost	Sales
39	47
65	53
62	58

90	86
82	62
75	68
25	60
98	91
36	51
78	84

9. Find the coefficient of correlation for the following data : 10

(1, 3), (2, 5), (3, 7), (4, 9), (5, 10), (6, 11), (7, 14), (8, 15), (9, 4), (10, 20).

10