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BCA/M-15

WEB DESIGNING

Paper-BCA-241

Time allowed: 3 hours] **[Maximum marks: 80**

Note: Attempt five questions in all including question bo.1 and selecting one question from each section. All question carry equal marks.

Compulsory Question

1. (a) Define Mode
   (b) What is Coefficient of M.D.?
   (c) Write the binomial distribution for n trials with r successes.
   (d) What is the relation between Coefficient of Correlation and Regression Coefficient?
   (e) What is one-way classification is ANOVA?
   (f) State Cochran's theorem.
   (g) Write any four methods of Forecasting.
   (h) Write normal equation of straight line.

UNIT-I

2. (a) The average weight of 150 students in a class is 80kg.The average weight of boys in the class is 85 kg and that of girls is 70kg .Find the number of boys and girls in the class separately.
   (b) The A.M and S.D of 100 items was recarded as 40 to 5.1 respectively. Later on it was discovered that one observation 40 was wronghy copied down as 50. Find the Correct S.D.

3. (a) Find the missing frequencies in the distribution When N = 229 and Median = 46

Variable	Frequency
10-20	12
20-30	30
30-40	?
40-50	65
50-60	?
60-70	25
70-80	18

(b) The mean of 5 observation 4 and variance is 5.2.If three of the five observations are 1, 2, and 6 find the other two.

UNIT-II

4. (a) If X follows binomial distribution with mean 4 and variance 2, find $P(|x-4| \leq 2)$.

(b) 2000 student appeared in an examination. Distribution of marks is assumed to be normal with mean = 30 and S.D. = 6.25. How many students are expected to get marks less than 25?

5. (a) Eight percent of the bolt produced in a certain factory turn out to be defective. Find the probability, using Poisson distribution, that in a sample of 25 bolts chosen at random

(i) Exactly

(ii) More than 3, will be defective.

(b) Calculate Karl Pearson's Coefficient of Correlation from the following data:

Husband's Age	Wife's Age
20	17
21	18
22	19
23	20
24	21
25	22
26	23

UNIT-III

6. (a) Find (i) Mean X and $\bar{Y}$, (ii) Regression Coefficients bxy & byx (iii) Coefficient of Correlation between x and y when two lines of regression are 3x + 13y = 19 and x + 3y = 5.

   (b) Write difference between Correlation and Regression.

7. (a) In a Bolts factory, machines I, II and III manufacture respectively 25%, 35%, 40% of the total bolts. Of their total output 5%, 4% and 2% are respectively defective bolts. A bolt is drawn at random from the product. If the bolt drawn is found to be defective, what is the probability that it is manufactured by (i) machine I, (ii) machine II, (iii) machine III.

UNIT-IV

8. (a) Write a short note on each of the following:
   (i) Uses of x^2 test
   (ii) Limitations of x^2 test
   (iii) Degree and freedom.

   (b) In a hospital 480 female babies and 520 male babies were born in a week. Do these figures confirm that males and females are born in equal numbers?

9. Three samples, each of size 5, were drawn from three uncorrelated normal populations with equal variances.Test the hypothesis that the populations means are equal to 5% level

Samples		
I	II	III
10	9	14
12	7	11
9	12	15
16	11	14
13	11	16