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Enroll No..... **Class Roll No.....**

LNCT UNIVERSITY
II MID SEMESTER TEST- (July-2024)
B.Tech. (Second Semester)
Subject: Linear Algebra and Optimization (CS-202)
CS/AIML, DS

TIME: 1.30 Hrs **M.M:20**

NOTE: 1.All Questions are compulsory.

Q1. The following data are the number of seeds germinating out of 10 on damp filter for 80 sets of seeds. Fit a binomial distribution to these data.

x	0	1	2	3	4	5	6	7	8	9	10	total
y	6	20	28	8	6	0	0	0	0	0	0	80

CO3) (7)

OR

Q1. Find the probability that at most 5 defective fuses will be found in a box of 200 fuses, if experience shows that 2 percent of such fuses are defective.

(CO3) (7)

Q2. Fit a straight line to the x and y values in the following table.

X	1	2	3	4	5	6	7
y	0.5	2.5	2	4	3.5	6	5.5

(CO3) (7)

OR

Q2. In a large city A, 20% of a random sample of 900 school boys had defective eye sight. In another large city B, 15.5% of a random sample of 1600 school boys had the same defect. Is this difference between the population significant?

(CO3) (7)

Q3. 200 digits were chosen at random from a set of table. The frequencies of the digits were.

Digit	0	1	2	3	4	5	6	7	8	9
Frequenci	18	19	23	21	16	25	22	20	21	15

Use the Chi-square test to asses the correctness of the hypothesis that the digits were distributed in equal number in the tables from which there were chosen. The 5% value of Chi- Square for 9 degree of freedom is 16.919 (C04) (6)

OR

Q3. Two independent sample of 8 and 7 items respectively had the following value of the variable (weight in ounces).

Sample I	9	11	13	11	15	9	12	14
Sample II	10	12	10	14	9	8	10	

Do the estimate of population variance differ significantly. Given that for 7 and 6 d.f. the value F at 5% level of significance is 4.20 (nearly). (C04) (6)

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