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M.Sc. (SEM-I)

Paper-4 (Linear Models)

Practical -2(One way classification model)

Q.1) The following table shows the lives (in hrs) of four batches of electric lamps:

Batches	Life of a bulbs in hrs
1	1600,1610,1650,1680,1700,1720,1800
2	1580,1640,1640,1700,1750
3	1460,1550,1600,1620,1640,1660,1740,1820
4	1510,1520,1530,1570,1600,1680

Perform an analysis of variance.

Q.2) In 25 plots four varieties v1, v2, v3, v4 of wheat are randomly put and their yield in kg are shown below.

V1 2000	V3 2270	V2 2230	V4 2270	V4 2180
V2 2160	V1 2100	V2 2050	V3 2300	V2 2280
V1 2200	V1 2300	V4 2040	V3 2420	V1 2240
V4 2370	V1 2250	V2 2040	V2 2360	V1 2460
V3 2210	V1 2340	V2 2190	V1 2150	V3 2020

Perform the ANOVA to test whether there is any significant difference between varieties of wheat.

Q.3) A manufacturing company has purchased three new machines and wishes to determine whether one of them is faster than the others in producing a certain output. Five hourly production figures are observed at random from each machine and the results are given in the following table,

	Machine A1	Machine A2	Machine A3
	25	31	24
	30	39	30
Observations	36	38	28
	38	42	25
	31	35	28

Use analysis of variance technique and determine whether the machines are significantly different in their mean speeds. Use 5% los.

Q.4) If we have three fertilizers and we have to compare their efficacy, this could be done by a field experiment in which each fertilizer is applied to 10 plots, and then 30 plots are later harvested, with the crop field being calculated for each plot. The data were recorded in following table:

Fertilizer	Yields (in tones) from the 10 plots allocated to that fertilizer									
1	6.27	5.36	6.39	4.85	5.99	7.14	5.08	4.07	4.35	4.95
2	3.07	3.29	4.04	4.19	0.41	0.75	4.87	3.94	6.49	3.15
3	4.04	3.79	4.56	4.55	4.53	3.53	3.71	7.00	4.61	4.55

Carry out Analysis of variance.

Q.4)