



(An Autonomous Institution)
Coimbatore – 35

DEPARTMENT OF MATHEMATICS

UNIT - II DESIGN OF EXPERIMENTS

ANALYSIS OF VARIANCE (ANOVA):

fuctorial,

ANOVA is a technique that will enable us to test the significance of the difference among more than two sample mean.

ASSUMPTION:

- I The observations are landom.
- 2) The observations are independent.
- 3) The samples are drawn from normal fopulations
- 4) Bopulation variances are equal

BASIC PRINCIPLES:

- 1) Randomisateon
- 2) Replication
- 3) Local control.

BASIC DESIGN.

- * Completely landomised design (CRD) One-way classif
- * Randomised Block design (RBD) two-way desifical
- * Latin square design (150) There-way classificati
- * Two square factorial design

Hist: - F - Ratio : F = 512 where 512 >52

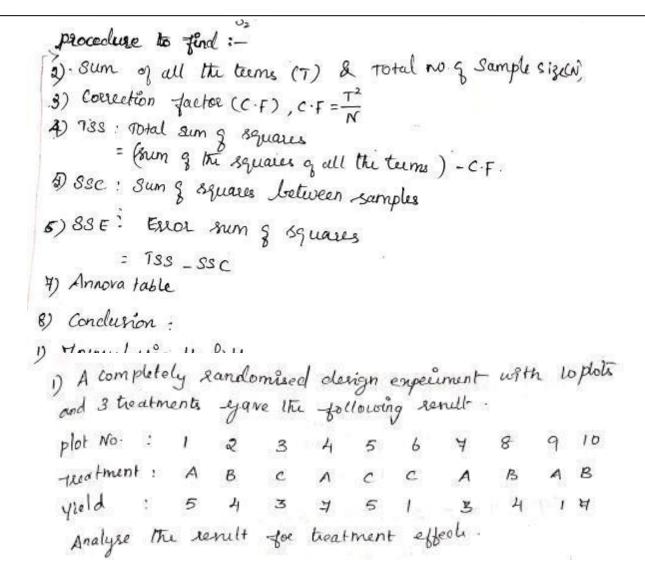




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(211)			5	A	3	1	× ×	B C.
(N2)	В		4	4	¥	- Apr.	4	1 5
(m3)	C		3	5	1		3	7 1
\varkappa_{i}	n,	ત્રક	Total	χı²	3/2	2 21.32		
5	4	3	12	25	16	, 9		
A	4	5	16	49	16	25		in par
3	F	1	11	9	49	1		
1	OU.	3-	1	1	BAHS	9		
16	15	9	40	84	81	35	- 11	
En	Én2	Eng		2n,2	£n,	2 En	2	

Step 1: Formulating 140 & H1:

Ho: There is no significance difference between

14, : There is significance difference between the

treatments.

$$N = n_1 + n_2 + n_3$$

$$= 4 + 3 + 3 = 10$$





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$$C \cdot \Gamma = \frac{7^2}{N} = \frac{40^2}{10}$$

step 5: SSC =
$$(\underline{\xi}_{N_1})^2 + (\underline{\xi}_{N_2})^2 + (\underline{\xi}_{N_3})^2 - \mathbf{T} \cdot \mathbf{F}$$

= $\frac{1b^2}{4} + \frac{15^2}{3} + \frac{9^2}{3} - 160$

Olip 7: Annova table:

Steps: Conclusion:

Fc = 1.61 < 19.35 = Fx , Ho & accepted.

a There à no régnificance différence between the