Reg. No. | | | | | | |
|---|---|---|---|---|---|

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.
(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., STATISTICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
VI	PART-III	CORE	U21ST611	DESIGN OF EXPERIMENTS

Date & Session: 24.04.2025/FN **Time: 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	A factor attached to an experimental unit to know its effects is termed as___ a) Replicates b) Factorization c) Treatment d) Control unit
CO1	K2	2.	Local control in the field is maintained through a) uniformity trials b) Randomization c) Natural factors d) All the above
CO2	K1	3.	In Analysis of variance, the total variance is splitted into _____ a) component variances b) separate variances c) component means d) two means
CO2	K2	4.	Out of many multiple range test which is considered superior is: a) Tukey's test. b) Newman Keul's test c) Duncan's test d) All the above
CO3	K1	5.	Randomization in an experiment to eliminate a) Systematic influences c) Human biases c) Dependences among observations d) All the above
CO3	K2	6.	Randomized block design is a_____ a) Three restrictional design b) Two restrictional design c) One restrictional design d) No restrictional design
CO4	K1	7.	In a RBD with four blocks and five treatments having one missing value, thee error degrees of freedom will be _____. a) 12 c) 10 b) 11 d) 9
CO4	K2	8.	A missing value in an experiment is estimated by the method of a) minimizing the error mean square b) ANCOVA c) both (a) and (b) d) Neither (a) nor (b)
CO5	K1	9.	Two types of effects measured in a factorial experiment are a) Simple and complex effects b) Both (i)&(ii) c) main and interaction effects d) Neither (i) nor (ii)
CO5	K2	10.	If different effects are confounded in different blocks, it is said to be a) complete confounding c) Balanced confounding b) Partial confounding d) None of the above

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	Describe the factors that are responsible for determining the number of replications.
			(OR)
CO1	K3	11b.	Explain the local control techniques.
CO2	K3	12a.	Describe that one-way classification with ANOVA table.
			(OR)
CO2	K3	12b.	Discuss Duncan's multiple range test.
CO3	K4	13a.	Highlight the advantages of CRD.
			(OR)
CO3	K4	13b.	Briefly analyze of $m \times m$ LSD, for one observation per experimental unit.
CO4	K4	14a.	Describe that estimation of missing value in RBD.
			(OR)
CO4	K4	14b.	Distinguish between ANOVA and ANCOVA.
CO5	K5	15a.	Describe that the main effects and interaction of 2^2 factorial design.
			(OR)
CO5	K5	15b.	Discuss the merits and demerits in confounding.

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	16a.	Explain principles of experimental design
			(OR)
CO1	K3	16b.	Calculate the minimum number of replications so that an observed difference of 10% of the mean will be taken as significant at 5% level, the C.V of the plot values being 12%.
CO2	K4	17a.	Describe the fixed effect model for ANOVA testing in one-way classification.
			(OR)
CO2	K4	17b.	Explain Newman Keul's test.
CO3	K4	18a.	Give the complete statistical analysis of C.R.D
			(OR)
CO3	K4	18b.	Describe that statistical analysis of R.B.D for one observation per experimental unit.
CO4	K5	19a.	Explain the estimating one missing observation in LSD
			(OR)
CO4	K5	19b.	Explain for one way classification with a single covariate in CRD.
CO5	K5	20a.	Describe that statistical analysis of 2^3 factorial experiment.
			(OR)
CO5	K5	20b.	Elaborate on BIBD with suitable examples.