GIET UNIVERSITY, GUNUPUR – 765022

B. Sc. (AG) (Second Semester) Examinations, October – 2021

AS 121 – Statistical Methods

Time: 2 hrs   Maximum : 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure.   (0.5 x 10 = 5 Marks)

a. _____ Sampling is used for Forest Survey
b. In _____ Distribution, mean is equal to variance
c. For platykurtic, the value of β is _____
d. In Skew Symmetric Distribution, Relation between Mean, Median & Mode is _____
e. Probability can be Expressed as _____
f. All the 3 Basic Principles are not applicable in _____ design?
g. LSD Stands for_____
h. Rank Correlation Coefficient is given by_____
i. The Error Degree of Freedom for LSD is _____
j. The Concept of Regression is given by _____

Q.2. Define (or) Explain the following in one or two sentences.   (1 x 5 = 5 Marks)

a. Define Level of Significance?
b. Write down the Steps of Testing of Hypothesis?
c. Write Short Notes on Skewness & Kurtosis?
d. Define Type-I & Type-II Error?
e. Explain the Relative Frequency & Cumulative Frequency with Example?

Q3. Match COLUMN-A with COLUMN-B   (0.5 x 10 = 5 Marks)

	Column – A			Column – B
(a)	One way ANOVA		(i)	RBD
(b)	Two Way ANOVA		(ii)	CRD
(c)	2×2 Contingency table		(iii)	Lottery Method
(d)	Stratified Sampling		(iv)	Probability Sampling
(e)	Simple Random Sampling		(v)	Non-Probability Sampling
(f)	Quota Sampling		(vi)	Chi-Square Test
(g)	Poisson Distribution		(vii)	α
(h)	Binomial Distribution		(viii)	$1-\beta$
(i)	Level of Significance		(ix)	Mean=Variance
(j)	Power of the Test		(x)	Mean >Variance

Q4. Write True or False against each statement   **(0.5 x 10 = 5 Marks)**

a. The probability is a non-negative real number & cannot exceed unity.

b. Quota Sampling is an example of Probability Sampling

c. Measure of central tendency are also known as averages of second order.

d. S.D is less affected by the fluctuations of sampling and hence stable

e. RBD gives maximum error Degree of Freedom.

f. A slight change in the series may bring drastic change in median value

g. For immediate comparison, histogram is used

h. Primary data is less efficient than secondary data

i. Student T-test is given by R.A. Fisher

j. Type -I error is more critical than Type-II Error

PART – B
Attempt _ANY FIVE_ questions. All question carry equal marks.   **(6 x 5 = 30 Marks)**

5. (a)What do you mean by Sampling Techniques? What are the different types of Sampling Methods? (b) Write down the objective & Use of Sampling along with the Need for Sampling in Agricultural Research.

6. The Ranks of same 16 students in Statistical Methods and Agri-Informatics are as follows. Two numbers with in brackets denote the ranks of the students in both the subjects

   (1,1) (2,10) (3,3) (4,4) (5,5) (6,7) (7,2) (8,6) (9,8) (10,11) (11,15) (12,9) (13,14) (14,12) (15,16) (16,13). Calculate the Rank correlation coefficient for proficiencies of this group in both the subjects

   (b) Briefly explain the Different properties of Regression Coefficient?

7. Write down the Basic Principles of Experimental Design? Prepare the ANOVA Table for RBD, LSD & CRD ?

8. The following table gives the number of fruits per trees, Find Mean, Median & CV (%)?

No of Fruits (X_i)	30	32	36	48	54	60	64	70
No. of trees (F_i)	08	12	14	20	24	18	16	10

9. (A) X speaks truth 75% and Y in 80% of the cases. In what percentage of cases are they likely to contradict each other in narrating the same incident?

   (B) An MBA applies for a job in two firms X and Y. The probability of his being selected in firm X is 0.7 and being rejected in Y is 0.5. The probability of at least one of his applications are being rejected is 0.6. What is the probability that he will be selected in one of the firms?

10. (a) From a city population, the probability of selecting

    (i). a male or a smoker is 7/10

    (ii). a male smoker is 2/5

    (iii). a male, if a smoker is already selected is 2/3.

    Find the probability of selecting i. a non-smoker ii. a male and iii. a smoker, if a male is first selected

    (b) A car travels 25 km at 25kph, 25km at 50kph and 25km at 75kph. Find the average speed of the car for the entire journey?

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