Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Agriculture
End Sem Examination Dec-2023
AG3CO23 Statistical Methods

Programme: B.Sc. (Hons.) Branch/Specialisation: Agriculture

Duration: 3 Hrs. **Maximum Marks: 50**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. Statistics is a branch of- **1**

(a) Mathematics (b) Geography
(c) Computer Science (d) Artificial intelligence

ii. Agriculture Statistics deals with- **1**

(a) Collection of data (b) Analysis of data
(c) Interpretation of data (d) All of these

iii. The value of probability lies between- **1**

(a) 0 (b) 1 (c) 2 (d) Both (a) and (b)

iv. Binomial and Poisson distributions are- **1**

(a) Artificial intelligence (b) Probability distribution
(c) None of these (d) Both (a) and (b)

v. Scatter diagram also known as- **1**

(a) Scatter plot (b) Scatter graph
(c) Correlation chart (d) All of these

vi. T-test also known as- **1**

(a) Scatter test (b) Shooting test
(c) Student t-test (d) All of these

vii. Chi-square test is denoted by- **1**

(a) X^2 (b) Z^2 (c) W^2 (d) P^2

viii. Full form of ANOVA- **1**

(a) Analysis of Variety (b) Analysis of Vegetables
(c) Analysis of Variance (d) Analysis of Viscosity

	ix.	What is sample? (a) A subset of larger population (b) A portion of the whole group (c) A part of the whole group (d) All of these	**1**
	x.	Quota Sampling involves- (a) Probability sampling (b) Non-probability sampling (c) Both (a) and (b) (d) None of these	**1**
Q.2	i.	What do you understand by mean?	**1**
	ii.	Give uses and importance of statistics in agriculture.	**2**
	iii.	Define agriculture statistics. Explain the application, merit and demerit of agriculture statistics.	**5**
OR	iv.	Explain in detail about measures of central tendency & dispersion. And also explain range, quartile deviation and mean deviation.	**5**
Q.3	i.	What is probability?	**1**
	ii.	Write the formula of Binomial & Poisson distributions and its uses.	**3**
	iii.	Explain Binomial & Poisson distributions.	**4**
OR	iv.	Give characteristics of binomial & Poisson distributions and its application.	**4**
Q.4	i.	Write the definition of correlation with its uses.	**2**
	ii.	What is Karl Pearson's equation and Linear Regression equations?	**6**
OR	iii.	In a fertilizer trial the grain yield of paddy (Kg/plot) was observed as follows: Under ammonium chloride 42, 39, 38, 60 & 41 kgs Under urea 38, 42, 56, 64, 68, 69, & 62 kgs. Find whether there is any difference between the sources of nitrogen.	**6**
Q.5	i.	Write brief account on Chi-Square and its types.	**2**
	ii.	Write the formula of Chi-square with its application.	**2**
	iii.	Illustrate using diagram about ANOVA table for one way classification.	**4**

OR	iv.	Elaborate Chi-square and its limitations in agriculture statistics.	**4**
Q.6		Attempt any two:	
	i.	Explain sampling and its types in agriculture.	**4**
	ii.	Explain the method of selection of samples in stratified random sampling.	**4**
	iii.	A population have 7 units 1, 2, 3, 4, 5, 6, 7. Write down all possible samples of size 2 (without replacement) which can be drawn from the given population and verify that sample mean is an unbiased estimate of the population mean. Also calculate its sample variance and verify that Var SRSWR ($\bar{X}$)> Var SRSWOR ($\bar{X}$).	**4**

******