

**B.Sc. (Ag.) Honours Semester-V Examination, 2018**

**Course No: AST-311 (Statistics)**

Signature of Centre Superintendent

**Roll No. :** (in figure) \_\_\_\_\_ (in words) \_\_\_\_\_

Student Index No. \_\_\_\_\_ Regn. No. \_\_\_\_\_ of \_\_\_\_\_

**Time : 2 Hours**

**Full marks : 40**

Questions are of value as indicated in the margin

**Part - I**  
**(Objective and Short Answer Type)**  
**(Use only ball point pen)**

**Time : 20 minutes**

**Full marks : 10**

- Note:** 1. Answer in question paper itself.  
2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. **State True (T) or False (F) in respect of the following statements:** 0.5×10=5

- (a) Tally marks is used in construction of frequency curve.
- (b) The graph obtained by joining the upper mid-points of a histogram is called frequency polygon.
- (c) The median value of 8, 4, 2, 5, 7 is 5.
- (d) Performing an experiment is known as event.
- (e) Variance of a standard normal variate is equal to 1.
- (f) Two independent variables have value of zero correlation coefficient.
- (g) Arithmetic mean of two regression coefficients is equal to the correlation coefficient.
- (h) In Poisson distribution mean is greater than variance.
- (i) Goodness of fit can be obtained by F-test.
- (j) The probability of type-I error is  $\alpha$

2. **Fill up the following blanks:** 1×5=5

- (a) Probability can never be greater than \_\_\_\_\_.
- (b) Sum of deviations of 10 numbers from its mean is \_\_\_\_\_.
- (c) In case of Normal distribution  $\beta_1 =$  \_\_\_\_\_ and  $p_2 =$  \_\_\_\_\_.
- (d) The significance between two large sample means is tested by \_\_\_\_\_ test.
- (e) When experimental material is homogeneous the proper design is \_\_\_\_\_.

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**Part - II**  
**(Descriptive Type)**

**Time : 100 minutes**

**Full marks : 30**

Questions are of value as indicated in the margin

Answer *any three* questions.

3. (a) What do you mean by central tendency of a frequency distribution? Describe briefly different measures of central tendency for a grouped frequency distribution.
- (b) Find all quartiles for the following data: 7+3=10  
5, 10, 15, 20, 7, 4
4. (a) Define classical and axiomatic definition of probability.
- (b) State addition and multiplication laws of probability.
- (c) Two cards are drawn from a well shuffled deck of 52 cards. What is the probability that there is a king and a queen? 3+4+3=10
5. (a) Define Poisson distribution. Discuss the important properties of this distribution.
- (b) In a given binomial probability distribution:  $b(x; 4, \frac{1}{2\pi})$ . Find (i)  $E(x)$  and (ii)  $Var(x)$  5+5=10
6. (a) Explain positive and negative correlation with examples.
- (b) Prove that correlation coefficient is independent of change of origin and scale.
- (c) Define regression equation of y on x and write the properties of regression. 3+3+4=10
7. Discuss the basic principles of design of Experiment. Define a completely Randomised Design (CRD) 4+6=10
- or
8. Write short notes on *any four* of the followings: 2.5×4=10
- (a) Measures of dispersion
- (b) Ogives
- (c) Paired t-test
- (d) Simple random sampling
- (e) Kurtosis and its measures
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