

# KERALA AGRICULTURAL UNIVERSITY

B.Sc Hons (Ag) 2010 Admission

VI<sup>th</sup> Semester Final Examination- July /August -2013

Cat. No: Stat.3203

Marks: 80

Title: Design & analysis of experiments (1+1)

Time: 3 hours

## I. State True or False

( 10 x 1 = 10 )

1. If the difference between two mean values is significant at 1 % level of significance then it will be significant at 5 % level also ;
2. The ANOVA for a two-way table with 6 rows and 4 columns has 23 degrees of freedom for the estimation of error variance
3. F – test is commonly known as Variance ratio test
4. The reciprocal of standard error gives a measure of precision of the experiment
5. An experiment laid out in a Completely Randomised Design requires that all the treatments should be replicated equal number of times
6. A Group of homogeneous experimental units is known as plot
7. Increasing the number of replications will increase the precision
8. The error degrees of freedom in a 5 x 5 LSD with one missing value is 12
9. In a  $2^3$  factorial experiment there are 2 factors each at 3 levels
10. ANOCOVA is a method for reducing experimental error

## II. Write short notes ( any ten )

( 10 x 3 = 30 )

1. Explain the terms : ( a ) Treatment ( b ) Block ( c ) experimental error
2. Importance of replication in experiments
3. Practical considerations in field experiments
4. Assumptions of ANOVA
5. Layout of RBD
6. Methods of controlling experimental error
7. Compact family block design
8. Advantages of factorial experiments over single factor experiments
9. Experiments in Cultivators' fields
10. Tuckey's test
11. Interpreting ANOVA results
12. Main effects and Interactions

III. Write short essays ( any six )

( 6 x 5 = 30 )

1. Give the salient features of CRD, RBD and LSD
2. Transformations in the analysis of experimental data
3. Analysis of Covariance and its uses
4. Missing plot technique in RBD
5. Randomisation of Latin Square
6. Split-plot and Strip-plot designs
7. Multiple comparison tests
8. Hypothesis testing

IV. Write essay ( any one )

( 1 x 10 = 10 )

1. Explain the basic principles of experimentation. How these principles are applied in CRD, RBD and LSD.
2. Define factorial experiments. Explain the Yates' algorithm . Give the ANOVA table for a  $2^3$  factorial RBD with 4 replications