KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Ag) 2006 Admission Vth Semester
Final Examination, March 2009

Stat 3103 — Max. Marks: 60
Design and Analysis of Experiments (1+1) — Time: 2 hours

I. A) Choose the best answer **(20X0.5=10.00)**

1. The repetition of the treatment under investigation is known as
   a) Randomization b) Replication c) Local control d) None of these
2. Which transformation is most appropriate for percentages
   a) Square root b) Arc sine c) Logarithmic d) All of these
3. If there are 5 treatments with 4 replication to each, the error degree of freedom for CRD will be
   a) 15 b) 20 c) 12 d) 9
4. Which design is most appropriate for the laboratory experiments
   a) RBD b) CRD c) LSD d) Factorial RBD
5. Which design follow the number of rows=number of columns = Number of treatments
   a) SPD b) Strip plot design c) LSD d) RBD
6. If there are 6 levels of moisture regime and 6 replications each, the error degree of freedom for LSD will be
   a) 25 b) 35 c) 36 d) 20
7. The allocation of the treatments to the different experimental units in a random manner is known as
   a) Randomization b) Replication c) Local control d) Sampling
8. The principles of making use of greater homogeneity in groups of experimental units to reduce the experimental error is referred as
   a) Replication b) Randomization c) Local control d) None of these
9. For the expression of standard error of mean, which formula is applicable
   a) $S/\sqrt{n}$ b) $2S/\sqrt{n}$ c) $\sqrt{S}/n$ d) $n/\sqrt{S}$
10. What is / are the basic principles of field experimentation
    a) Randomization b) Replication c) Local Control d) All of these

B) Fill up the blanks

11. Most appropriate transformation for countable data is_____
12. If there are 5 treatments with 4 replication to each, the error degree of freedom for RBD will be_____
13. Design is most appropriate for the animal husbandry experiment is _____
14. _____ is most suited design for field experiment.
15. The principles of making use of greater homogeneity in groups of experimental units to reduce the experimental error is referred as_____
16. Set of treatments are known as_____
17. Object of comparison is also known as_____
18. The minimum error degrees of freedom should be at least_____
19. _____number of treatments are adopted in LSD.
20. Local control absent in _____design.

II. Short Answers (6X1=6.00)

1. Experimental material
2. Treatment
3. Experimental error
4. Asymmetrical factorial experiment
5. Randomization
6. Disadvantages of CRD

III. Short notes **Any Six** (6X2=12.00)

1. Whole plot treatment vs Sub plot treatment
2. Interaction effect
3. Hidden replication
4. Assumptions for ANOVA
5. ANOVA table for Strip plot design
6. Advantages of RBD
7. Critical difference
8. Formula for Estimate the missing value in LSD

IV. Paragraph Questions **Any Four** (4X3=12.00)

1. ANOVA
2. Differentiate main and interaction effects
3. Advantages and disadvantages of CRD
4. Border effects
5. Optimum plot size
6. Strip plot design

V. Short Essays **Any Four** (4X5=20.00)

1. Write in detail about Missing plot techniques in RBD.
2. Give the layout and analysis of Split plot design
3. Explain analysis of covariance
4. Explain Basic principles of experimental designs.
5. Briefly explain advantages and disadvantages of factorial experiment over single factor experiment.