KERALA AGRICULTURAL UNIVERSITY

B.Tech. (Ag. Engg.) Re- Examination – December, 2011

SAC 416   Max.marks:60

Statistics (2 + 1)   Time: 3 hours

I.   Answer the following   (Answer all questions)   (20 x .5 = 10)

1. The sum of square of deviations is least when measured from -------------
2. In any distribution the standard deviation is always ------- the mean deviation.
3. If 25% of the items are less than 10 and 25% are more than 40, the coefficient of quartile deviation is ---------------.
4. In a symmetric distribution the mean and the mode are -----------.
5. If the mean and the mode of a given distribution are equal then its coefficient of skewness is ------------.
6. If the Kurtosis of a distribution is 3 it is called ------------ distribution.
7. The sum of the deviations is least when measured from a) Median b) Mean c) Mode e) None of these
8. If all the values of a discrete distribution are same then the SD is -----------
9. If each of a set of observations of a variable is multiplied by a constant (Non-zero) value, the variance of the resultant variable a) is unaltered b) Increases c) Decreases d) unknown.
10. Mean, Standard deviation and variance have same unit (True / False)
11. The area under the normal curve is always 1 (True / False).
12. The hypothesis under test is called as -------------.
13. Power is the probability of a right decision (True or false)
14. The simplest of a contingency table is------------- table
15. The set of sample points which leads to the rejection of null hypothesis is called -------- region.
16. In RBD --------- elimination of heterogeneity is involved.
17. Probability of the sample space is --------------.
18. Events are ------------ of the sample space.
19. The degrees of freedom of a chisquare statistic computed from a 3 x 4 contingency table is -------------.
20. ---------- Distribution is a distribution of rare events.

II.   Answer the following   (Answer all questions)   (14 x 1 = 14)

1. Distinguish between the use of pie chart and bar chart.
2. Define (a) Parameter (b) Statistic
3. What is the practical utility of Harmonic mean?
4. What is the advantage of 'range' as a statistic?
5. What is stem and leaf display?
6. Define quartile deviation?
7. What is the utility of scatter diagram?
8. What are the limits of regression co-efficient?
9. Define power of a test?
10. Why is standard deviation used more frequently?
11. Define F-statistic?
12. When will you say that a function is linear?
13. What is an unbiased estimate?
14. Define level of significance?

III.   Answer <u>any Eight</u> of the following   (8 x 2 = 16)

1. State the assumptions and conditions under which two sample 't' test holds good?
2. How to draw a component bar diagram? Explain with an example?
3. How to fit a parabola for a set of data?
4. What is Yates correction and how to do it?
5. How to calculate geometric mean for a grouped data.
6. How to calculate chi square from a r x c contingency table? Give its degrees of freedom?
7. Give the formula for calculating SE of a treatment mean and CD based on error mean squares?
8. State the axioms of probability?
9. When will you say that (1) two events are independent (2) two random variables are independent?
10. Distinguish between multiple correlation and partial correlation?

IV.   Answer <u>any Five</u> of the following   (5 x 4 = 20)

1. What is meant by the regression of Y on X? How to fit its equation?
2. Distinguish between correlation and regression?
3. Discuss the properties of normal distribution.
4. Give the probability density functions of Binomial, Poisson and Normal distribution?
5. What are the uses of chi square statistic?
6. Define rejection error, acceptance error and level of significance?

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