KERALA AGRICULTURAL UNIVERSITY 2005-S2

B.Sc. (Ag) 2005 Admission II Semester Final Examination, October 2006

Stat 1201 Max. Marks: 60

Elementary Statistics (1+1) Time: 2 hours

Part – A : Answer ALL the Questions **(20 x ½ = 10)**

1. Harmonic mean of a number of observations is the reciprocal of the arithmetic mean of the reciprocal of the given values True/false
2. Mean deviation is the least when measured from the median True/false
3. The Coefficient of variation = c.v = $\frac{\bar{x}}{\sigma} \times 100$ True/false
4. The convexity of a curve is also known as kurtosis True/false
5. The limits of the correlation coefficients are –1 to + 1 True/false
6. Coefficient of dispersion = $\frac{Meandeviation}{Mean}$ True /false
7. If A,B,C are any three events then the expression for the occurrence of one and no more event is
8. If A and B are any two independent events then P(A∩B) = _____
9. The peakness of the curve is skewness True/false
10. The mean, median and mode coincide in a Normal distribution True/false
11. Bionomial distribution is a continuous distribution True/false
12. F-test can be applied for testing equality of variances True/false
13. Critical region is the region of rejection in testing hypothesis True/false
14. Correlation coefficient and coefficient of concordance are equal True/false
15. A sample is part of the population True/false
16. In cluster sampling, the population is splitted into many sub-population True/false
17. Explain level of significance.
18. What do you mean by z-transformation of the correlation coefficient
19. A null hypothesis is a hypothesis of no difference True/false
20. The relation between t and F is $t^2 = F$ True /false

Part – B : Answer ALL the Questions (6X1=6)

1. What are the ranges of probability?
2. What is scatter diagram?
3. What is the linear regression of y on x.
4. Write the multiplication theorem on probability
5. When do we use paired 't' test .
6. Find the mean of the sampling distribution of mean. .

Part – C : Answer any SIX Questions (6X2=12)

1. What are the merits & demerits of measures of central tendency?
2. Explain the method of constructing bar diagram.
3. State and prove addition theorem on probability.
4. What is an impossible event? Prove that the probability of an impossible event is zero.
5. What are ranges of the correlation co-efficient. Give your inference for its different values.
6. Write the applications of Poisson distribution?
7. Find the mean of the binomial distribution.
8. What are the two types of errors in statistics?

Part – D : Answer any FOUR Questions (4 x 3= 12)

1. Explain (i) Bar diagram and (ii) Histogram
2. There are five agricultural labors. They can complete weeding operations in a 100 square metre of land in 4, 5, 5, 6 and 7 hours. If these five labors are employed for weeding in 500 square metre area in many hours will they complete work?
3. Suppose that a population of size 500 consists of 300 dominants and 200 recessives. For a sample of size 10 calculate the probabilities of atleast two individuals will be recessive.
4. Explain the method of testing hypothesis about difference of the population mean.
5. Explain chi-square test for testing the independence of attributes.
6. Write the normal equations for fitting the regression line of the form $y = a + bx + cx^2$

Part – E: Answer any FOUR Questions (4 x 5= 20)

1. Calculate mean, variance, skewers and kurtosis for the distribution

x	0	1	2	3	4	5	6	7	8
f	1	8	28	56	70	56	28	8	1

2. A, B, C are any three arbitrary events find the expression for
(i) only A occurs (ii) Both A and B but not C occurs (iii) All the three events occur (iv) At least one occurs (v) At lease two occurs (vi) one and no more occurs(vii) two and no more occur (viii) None occur (ix) Not more than two occur.
Prove that P(S)=1, given that S is a sure event.

3. Explain the comparison of two populations means given (i) independent samples with equal variances and (ii) independent samples with unequal variances

4. Write in detail about correlation of a bivariate distribution

5. Explain the following (i) Sample (ii) Standard error (iii) Sampling distribution
(iv) Hypothesis and (v) Critical region

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