Eastern University, Sri Lanka

Second year First Semester Examination in Agriculture 2010/2011

(Dec/Jan 2012/2013)

CSC 2103 Introductory Statistics

Time: 2 hours

Answer all questions

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1. Weights of 30 capsicum pods (g) are given below.

   46, 50, 52, 52, 52, 54, 54, 56, 56, 57, 58, 58, 59, 60, 60, 60, 61, 62, 63, 63,
   63, 63, 64, 65, 66, 67, 67, 68, 70, 76

   a. Find the range and mean of the pod weight.
   b. Construct the frequency distribution table.
      (Assume classes: $50 \leq X < 55$, $55 \leq X < 60$, $60 \leq X < 65$, $65 \leq X < 70$, $75 \leq X < 80$).
   c. Construct a histogram to demonstrate the frequency distribution.

2. a. Briefly explain the simple linear correlation with suitable graphs.

   b. In 200 tosses of coin, 115 heads and 85 tails were observed. Compare the χ^2 value and interpret your result at P=0.05.

   c. Compare the range, mean deviation, standard deviation and variance for the following data set.

      32, 35, 38, 33, 54, 66, 45, 55, 60 and 49

3. a. Write the assumptions of ANOVA.

   b. An agricultural researcher tests the effects of three different fertilizers on rice yields in tons from four different and equal plot of lands are given below.

Cowdung	Compost	Urea
49	53	50
42	37	39
46	45	49
39	53	46

   I. State the null hypothesis and alternating hypothesis.
   II. Construct the ANOVA table.
   III. Interpret your results.

4. A researcher wants to find out whether there is a relationship between the age and blood pressure. He took a random sample of 10 women and their blood pressures are given below.

Age (X)	Blood pressure (Y)
56	147
42	125
36	118
47	128
49	145
42	140
72	155
63	160
55	149
60	150

a. Draw a scatted diagram.
b. Find the correlation coefficient between X and Y.
c. Determine the regression line of Y on X.
d. Estimate the blood pressure of a women whose age is 45.