

Eastern University, Sri Lanka

Second Year First Semester Examination in Agriculture - 2006/2007

Repeat Examination (March, 2015)

External Degree

CSC 2103 Introductory Statistics

Time allowed: 2 hours

Answer all questions.

- 1) The following data represent the maize plant heights (cm) of a given day in a farmer's field:
- 48, 52, 60, 60, 65, 55, 59, 57, 59, 56
- Find the mean, median and mode.
  - What is the range of the data?
  - Compute the variance and standard deviation.
  - Find the coefficient of variance.
  - Draw a single stem and leaf plot for the above data set.
- 2) A research student wants to study the yield performance of five chilli varieties in shade house using Complete Block Design. The experiment contain 25 plots and recorded yield from each plot are given below:

Variety	Yield (tons/ha)				
1	1.7	1.9	1.6	2.1	1.5
2	2.1	2.4	1.9	2.2	2.3
3	2.7	2.6	2.3	2.5	2.4
4	0.8	0.8	1.2	0.9	1.0
5	2.8	2.8	2.6	2.9	3.0

- State the null and alternative hypothesis for the above experiment
- Construct the ANOVA table
- Interpret your results at  $P=0.05$

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- 3) The study was conducted to find out the effect of rainfall (mm) on wheat yield (Kg/ha/yr). The total July rainfall and yield of wheat for 10 successive years are given below.

Rainfall (mm)	Yield (x10 Kg/ha)
147	206
53	145
112	186
170	220
41	159
91	161
84	180
81	160
124	197
147	214

- Draw a scatted diagram for the above data set.
  - Fit the regression line.
  - Estimate the yield when rainfall is 100 mm.
- 4) A researcher wants to study the effect of smoking with age. The summarized results are given in the following table.

	Male	Female
Smoking	350	250
Non smoking	250	150

- Write the hypothesis for the above study.
- Find out the expected frequency for each cell.
- Compute the Chi square statistics.
- Is it significant at  $\alpha = 5\%$ .

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