EASTERN UNIVERSITY, SRILANKA
THIRD YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE 2008/2009
(September/ October 2009)
AEN 3102 SOIL AND WATER CONSERVATION (1:15/00)

Answer all questions
Time: 01 hour

01. A specified water shed has following information

- Soil- silty clay loam, which K = 0.34
- Field slope length 60m with average slope 9%
- Cropping and managing 3-year rotation of wheat, rice and maize: C factor 0.009
- The straight-row cultivation is practiced in up and down slopes
- Soil loss tolerance of the area is estimated as 4tons/acre/year.

(a) Determine and discuss the most suitable conservation practice to suit the soil loss tolerance of area based on the following tables. Assume R as 240.

Table 1: LS factor calculation

Slope Length(m)	Slope (%)	LS Factor
30 m	12	1.90
	10	1.00
	9	1.20
	6	0.90
	3	0.70
	0	0.06

Table 1: LS factor calculation

Slope Length(m)	Slope (%)	LS Factor
60 m	12	2.10
	10	1.90
	9	1.70
	6	1.10
	3	0.80
	0	0.07

Table 1: LS factor calculation

Slope Length(m)	Slope (%)	LS Factor
120 m	12	2.60
	10	2.40
	9	1.90
	6	1.30
	3	0.90
	0	0.09

Table 2: Recommended values of conservation practices factor(P)

Slope (%)	Straight - row	Contouring	Contour strip cropping	Terracing + contouring
1.1-2.0	1	0.6	0.30	-
2.1-7.0		0.5	0.25	0.10
7.1-12.0		0.6	0.30	0.12
12.1-18.0		0.8	0.40	0.16
18.1-24.0		0.9	0.45	-
24.1-25.0		0.98	0.50	-

(b) Briefly discuss the methods that you predicted in (a) with suitable illustrations?

02. Briefly discus the following issues

a) Control of erosion by crop management
b) Irrigation decision with limited water and climate