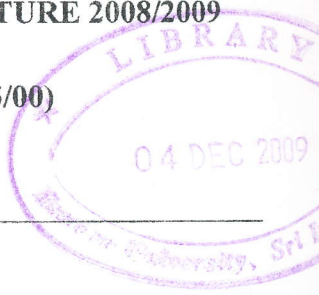


EASTERN UNIVERSITY, SRILANKA
THIRD YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE 2008/2009
(September/ October 2009)
AEN 3102 SOIL AND WATER CONSERVATION (1:15/00)



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.

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

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

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

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 discuss the following issues

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