



The Open University of Sri Lanka  
Faculty of Engineering Technology

Diploma/Degree in Technology and Industrial Studies  
(Agriculture)

Final Examination- 2008/2009

**AEX4232 Soil and Water Conservation**

Date : 30-03-2009  
Time : 0930-1230 hours

**SECTION II - Answer four (04) questions only**

- (1) (a) What are the agencies involved in implementing soil conservation practices in Sri Lanka.  
(b) Discuss the importance of controlling soil erosion with suitable examples in Sri Lanka.  
(c) What are the constraints to implement soil conservation practices in Sri Lanka.
- (2) (a) What are the characteristics of rainfall which effect the rain splash impact on erosion process and briefly explain them.  
(b) What is meant by "Medium volume drop diameter" ( $D_{50}$ ) and discuss the advantages and disadvantages of  $D_{50}$  index?
- (3) (a) What is run off co-efficient (C) and discuss the factors which combine with runoff co-efficient and consequently the runoff.  
(b) If a catchment is 10% rolling woodland on dense clay, 30% flat cultivated sandy loam and 50% flat pasture clay loam, what would be the weighted run-off coefficient?

Topography and Vegetation	Sandy loam	Soil texture clay & silt loam	Dense clay
Woodland			
Flat	0.10	0.30	0.40
Rolling	0.25	0.35	0.50
Hilly	0.30	0.50	0.60
Pasture			
Flat	0.10	0.30	0.40
Rolling	0.16	0.36	0.55
Hilly	0.22	0.42	0.60

Cultivated			
Flat	0.30	0.50	0.60
Rolling	0.40	0.60	0.70
Hilly	0.52	0.72	0.82

- (4) (a) What is gully erosion? Briefly explain the nature and causes of gully erosion.
- (b) Discuss the soil erosion in upland tea plantations in Sri Lanka and propose possible adaptation and mitigation measures to improve the productivity of Tea plants.
- (5) (a) Define the following terms  
 1) Erosivity                      2) Erodibility
- (b) Briefly discuss the factors affecting erodibility.
- (c) Discuss the need for water conservation in Sri Lanka with suitable examples from different agro ecological regions.
- (6) Write short notes on any three (03) of the followings.
- (a) Land Use Planning
- (b) Forest Encroachment
- (c) Sediment transport by streams.
- (d) Live mulch cropping