The Open University of Sri Lanka
Faculty of Engineering Technology
Industrial Studies Programme of Study
Final Examination – 2011/2012
AEX5232 Soil plant water relationship

Date : 29.02.2012
Time : 9.30-12.30
Duration : Three (03) hours

SECTION 2: Answer any **four** (04) questions. All questions carry equal marks.

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1) a) State three (03) methods which are used for the measurement of soil moisture
b) Explain the soil moisture characteristic curve and discuss the effect of soil texture on soil water retention.

2) Write an account on the factors affecting the rate of transpiration.

3) a) Define the term "soil degradation"?
b) Explain the different types of soil degradation.

4) a) Distinguish between the Net Irrigation Requirement and Gross Irrigation Requirement.
b) The following data were obtained in determining the soil moisture content at different depths in the root zone prior to the irrigation.

Depth (cm)	Weight of moist soil (g)	Oven dry weight of soil (g)
0-25	130.50	122.45
25-50	129.78	119.55
50-75	126.85	120.52
75-100	109.62	100.44

The bulk density of the soil in root zone was 1.55 g/cm. The available moisture holding capacity was 16.9 cm/m depth. Determine the
i. moisture content at different depths
ii. net irrigation requirement
iii. gross irrigation requirement when the irrigation efficiency is 70%

5) a) How do we classify irrigation systems?
b) Explain in detail irrigation scheduling methods indicating criterion, advantages and disadvantages.

6) Write short notes on any **three** (03) of the following.

i. Soil Reclamation.
ii. Hysteresis
iii. Time Domain Reflectometry (TDR)
iv. Eutrophication
v. Erosion by water