Uva Wellassa University
B.Sc. in Export Agriculture

End Semester Examination December/ January 2009/10
Year II Semester I

Irrigation and Water Management (Repeat) EAG 231-2

Instructions

Answer **all** questions
No. of questions : Four (04)
No. of pages : Two (02)
Total marks allocated : 40/100
Time : Two hours (02 hrs)

1.

a. What is meant by irrigation scheduling?

b. Discuss the importance of proper scheduling of irrigation

c. List the factors that should be considered when deciding the amount water to be applied to the soil at each irrigation

2.

a. Soil samples were taken at different depths of soil to determine the soil moisture in a cultivated land. The results are given bellow.

Depth of soil (cm)	Weight of moist soil sample (g)	Oven dry weight of soil (g)
00-25	135.44	127.38
25-50	133.52	125.42
50-75	116.94	108.98
75-100	125.40	115.32

The average bulk density of the root zone was 1.5g/cm^3 .The field capacity of the soil was 17.8cm/m depth of soil. Determine,

i. The moisture contents in the root zone at different depths.

ii. Depth of water to be applied to bring the moisture content to field capacity.

b. What are the dominant variables in border irrigation?

c. Briefly explain the following in relation to border irrigation

   i. Recession curve

   ii. Advanced curve

   iii. Infiltration opportunity time

3. Discuss the factors to be considered when designing an irrigation system.

4.

a. Distinguish between the following

   i. NIR and GIR

   ii. Gravitational water and capillary water

   iii. Irrigation interval and irrigation frequency

   iv. Consumptive use and evapo-transpiration (ET)

b. The moisture content in the root zone of a crop at the start of irrigation was 12%. The field capacity of the soil was 24%. Irrigation efficiency was 75%. Bulk density was 1.5g/cm^3. Peak period consumptive use rate was 4 cm/day. Determine;

   i. Net irrigation requirement

   ii. Gross irrigation requirement

   iii. Irrigation interval