

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

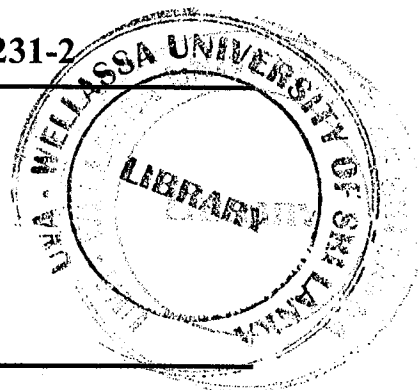
Answer **all** questions

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