

UVA WELLISSA UNIVERSITY OF SRI LANKA  
FACULTY OF ANIMAL SCIENCE & EXPORT AGRICULTURE



BSc in Export Agriculture  
BSc in Tea Technology and Value Addition

First Year Second Semester Examination – December 2016/January 2017

Irrigation and Water Management (EAG 131- 2)  
Essay Questions

**Instructions:**

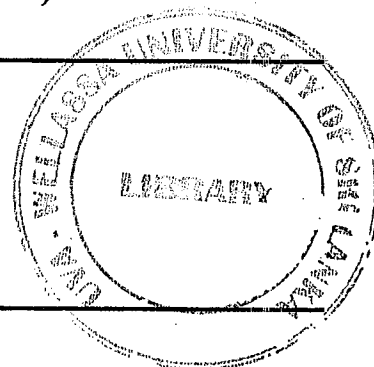
Answer all questions in the given booklet.

No. of questions : Four (04)

No. of pages : Two (02)

Time : Two (02) hours

Total marks allocated : 100%



01. Write short notes on followings;

- (I). Water sensitivity during typical growth stages of an annual crop (20 marks)
- (II). Rainwater Harvesting Technology as water management strategy (20 marks)
- (III). Controlled drainage as a water management strategy (20 marks)
- (IV). Different water application methods practiced in irrigation (20 marks)
- (V). Four sub-systems of irrigation system (20 marks)

02. Briefly discuss followings giving suitable sketches where necessary;

- (I). Purpose of irrigation for agricultural lands (25 marks)
- (II). Problems of irrigation for agricultural lands (25 marks)
- (III). Ideal wetting pattern of furrow irrigation (25 marks)
- (IV). Proper layout of rotating type sprinkler system for uniform distribution of water. (25 marks)

03. Soil properties of a certain crop field are as follows.

Moisture content at field capacity (FC)	= 28%
Moisture content just before irrigation	= 24%
Permanent wilting point (PWP)	= 15%
Bulk density (BD)	= 1.5 g/cm <sup>3</sup>
Porosity	= 60%
Root depth	= 120 cm

Calculate,

- a) True density of the soil. (15 marks)
- b) Total available water as a depth in the root zone. (15 marks)
- c) Net water requirement as a depth in the root zone. (15 marks)
- d) Net water requirement as a volume for a hectare. (15 marks)
- e) If  $ET_c$  is 6.0 mm/day, the irrigation interval. (20 marks)
- f) If application efficiency is 60%, the gross water requirement. (20 marks)

04. Following table shows the collected volumes of water in 16 cans during a can experiment conducted by a group of students of Uva Wellassa University. The average diameter of cans was 14 cm.

Can No.	Collected water (mL)	Can No.	Collected water (mL)
1	350	9	365
2	380	10	370
3	375	11	365
4	360	12	320
5	305	13	375
6	345	14	310
7	300	15	362
8	380	16	315

Calculate,

- (I). Pattern efficiency of the sprinkler head. (50 marks)
- (II). Uniformity co-efficient of the sprinkler head. (50 marks)

[End of the Paper]

