UVA WELLASSA 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^3
Porosity	= 60%
Root depth	= 120 cm

(18)

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]