

Uva Wellassa University
Faculty of Animal Science and Export Agriculture
BSc in Tea Technology and Value Addition
BSc in Palm & Latex Technology and Value Addition



Uva Wellassa
University

End Semester Examination –July/August 2016
Year II Semester I

Water Management Technology (PLT 241-2) / (TEA 242-2)

Instructions

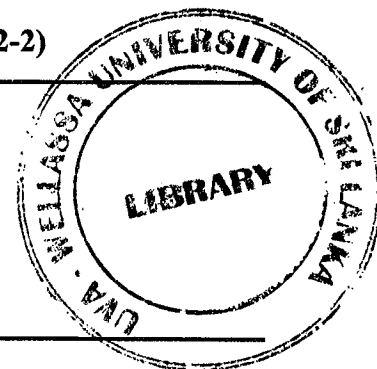
Answer all questions

No. of questions : Three (03)

No. of pages : Two (02)

Time : One (01) hour

Total marks allocated : 40%



PART III – ESSAY

Question 01

(100 marks)

Briefly discuss the importance of water management and different strategies of water management adopted in;

- 1.1. Coconut Plantations
- 1.2. Rubber Plantations
- 1.3. Tea Plantations

Question 02

2.1. Write short notes on;

(40 marks)

- I. Water conveyance efficiency
- II. Water application efficiency
- III. Water storage efficiency
- IV. Water distribution efficiency

2.2. 10 ha of coconut land is going to be irrigated by 30 pumps working for 12 hours a day with equal capacity. Irrigation is desired to start at 60 % depletion of total available water of the soil. The total available water of the soil is 30 cm per metre depth of soil. The depth of root zone is 120 cm. The conveyance and water application efficiencies are 60 % and 70 % respectively. The mean daily consumptive use rate of coconut plants in this field is 8 mm per day. Work out;

(60 marks)

- I. net irrigation requirement in m^3
- II. gross irrigation requirement in m^3
- III. irrigation interval in days
- IV. required capacity of one irrigation pump in L/s

Question 03

3.1. Briefly discuss the proper layout of a sprinkler system with rotating type sprinkler heads that should be arranged in a field to obtain uniform distribution of water.

(40 marks)

3.2. 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 the cans was 10 cm.

(60 marks)

Can No.	Collected water (mL)	Can No.	Collected water (mL)
1	340	9	325
2	385	10	370
3	315	11	365
4	360	12	320
5	330	13	378
6	345	14	310
7	300	15	362
8	380	16	305

Calculate,

- I. Average depth of collected water.
- II. Average minimum depth of collected water.
- III. Pattern efficiency of the sprinkler head.

