EASTERN UNIVERSITY, SRI LANKA

FINAL YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2016/17

AE 4111 – PRESSURIZED IRRIGATION SYSTEM (2: 15/30/45)

(December 2018)

(PRACTICAL EXAMINATION)

Answer all Questions
Time: Two hours

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01. (a) What are the common characteristics of Micro irrigation methods?

(b) Classify the impurities that cause clogging problem in micro irrigation systems.

(c) What are the criteria for selecting fertilizer for the use in pressurized irrigation system?

02. (a) Give the possible layout of the drip irrigation systems based on the different locations of a water source.

(b) Determine the discharge coefficient (K) discharge exponent (x) and discharge (Q3) using following observations.

Q 1 = 3 lit/s at H1 = 5 m

Q 2 = 4 lit/s at H2 = 10 m

Q 3 = ???? at H3 = 17 m

03. (a) Define the term Manufacturer's coefficient of variation (MCV).

(b) Discharge from 17 micro sprinklers were collected for the duration of 10 minutes at 2 kg/cm^2 operating pressure and presented below (in liters).

15.2	15.3	14.4	15.1	15.8	14.8
14.8	14.7	15.1	15.2	12.8	13.7
14.1	14.4	13.7	15.7	14.9	

Determine the Manufacturer's coefficient of variation (MCV) and field emission uniformity of the system.

(PTO)

04. (a) What do you mean by emission uniformity?

(b) Compute emission uniformity and design emission uniformity using the following observations (assume MCV=0.05 and Number of emitters/plant =1)

Emitter	Average discharge (lit/hr)	Emitter	Average discharge (lit/hr)
1	5.8	8	3.1
2	5.8	9	3.2
3	6.3	10	3.4
4	6.0	11	8.6
5	3.3	12	5.8
6	3.5	13	5.9
7	3.3	14	6.2

(c) Which type of micro irrigation method is suitable for your area (mention your area) and explain the reasons?
