



0044

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Agricultural & Plantation Engineering



Study Programme	: Bachelor of Industrial Studies Honours (Agriculture)
Name of the Examination	: Final Examination
Course Code and Title	: AGI4555-Irrigation and Drainage Engineering
Academic Year	: 2024/2025
Date	: 05-02-2026
Time	: 0930-1230hrs
Duration	: 3 hours

Registration No :

Instructions

1. This question paper consists of two sections.

SECTION 1

- Contains FIFTEEN (15) questions. You are required to **answer all questions**. Answers should be written in the space provided for each question. No additional paper is provided. You may spend about **one hour** to answer this section.

SECTION 2

- Contain SIX (06) essay type questions. You are required to answer **ONLY FOUR (04)** questions. You may spend about **two hours** to answer the questions in this section.
- Read the questions carefully before answering. In case of doubt, please consult the supervisor or an invigilator conducting the examination.
- It is **EXTREMELY IMPORTANT** that you do not remove the SECTION I of the question paper from the examination hall.

Please note that you should write your registration number in the space provided above. Do not write your name.

SECTION 1: Answer all questions. Use the space give under each question.

1. List **four (04)** factors affecting evaporation?

2. Define "Consumptive Use"

3. Compare the total available water in mm/m in Heavy clay, silt clay and loam soils.

4. Name **five (05)** distinct emitter types used in Drip irrigation.

5. Name **three (03)** methods to prevent clogging in drip irrigation

6. What is meant by "Wild Flooding".

7. What is meant by "Recession Flow"?

8. Name **two (02)** Pressure Compensating Emitters.

9. State the required slope in percentage for the following graded irrigation methods?

Furrows

Corrugations

Bordes

10. Name **four (04)** mechanisms of water related infection transmission

11. Define "Reaction Factor"

12. Define "Drainable Pore Space"

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13. Name **four (04)** principal types of drainage machines used for the installation of pipe drainage systems

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14. Name three **(03)** Long Path Emitters

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15. Briefly describe the acid sulphate soil formation.

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END OF SECTION



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SECTION 2: Answer any four (04) questions. All questions carry equal marks.

1. (a). Define the Potential evapotranspiration and explain the relationship between the potential evapotranspiration and crop evapotranspiration. (15 marks)
 (b). Briefly explain the crop growth stages with suitable diagram and the its importance on crop evapotranspiration. (10 marks)
2. (a) Briefly describe the design and operation of Drip Irrigation system with suitable diagram (15 marks)
 (b) Explain the advantages and disadvantage of drip irrigation system. (10 marks)
- 3.(a) Briefly explain the 'Tank Cascade System' with suitable diagram. (15 marks)
 (b) Compare the Traditional water distribution system with present water distribution system. (10 marks)
- 4.(a). Briefly describe the effect of irrigation on public health. (15 marks)
 (b). Describe the environmental management for vector control in Irrigation projects. (10marks)

5. Briefly discuss the historical background of irrigation during Polonaruwa period in Sri Lanka.
(25 marks)

6. Write short notes on any **three (03)** of the following.

- (i) Effects of excess water
- (iii) Unsteady state design criteria for drainage.
- (iv) Decline of Irrigation Civilization
- (v) Pipe drainage machines

(25 marks)

END OF PAPER