

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



935

Study Programme	: Bachelor of Industrial Studies Honours (Agriculture)
Name of the Examination	: Final Examination
Course Code and Title	: AGX6283- Groundwater Resources Management
Academic Year	: 2023/2024
Date	: 20-02-2025
Time	: 1330-1630hrs
Duration	: 3 hours

Registration No: Index No.....

INSTRUCTIONS

- This question paper consists of two sections. SECTION I and SECTION II

SECTION 1

- There are FIFTEEN (15) Structured Essay 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

- There are 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.

It is **EXTREMELY IMPORTANT** that you should 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 given under each question.

1. What is Tank Cascade System? and what are the uses of it?

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2. What is an Agro well? and explain its characteristics and suitability in Dry zone of Sri Lanka.

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3. What is meant by K_{oc} ? Give two (02) examples for compounds having very high K_{oc} ?

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4. Name the two (02) types of groundwater flow models.

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5. What are two (02) phases in pumping test?

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6. List five (05) waterborne diseases..

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7. How do you remove excess fluoride in water at household level?

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8. How do you clean water with high turbidity at household level?

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9. What is the predominant aquifer in the Dry zone of Sri Lanka? Draw a schematic cross section of that Aquifer?

10. List the **five (05)** levels of the logical approach to groundwater siting.

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11. What is ^{the} basis of "Magneto Metric method" in geophysical methods in groundwater investigations.

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12. Name the **four (04)** stages of crop development.

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13. What is "Uniformity Coefficient"?

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14. List six **(06)** information needed for Aquifer Vulnerability Assessment.

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15. Given **four (04)** transport processes of groundwater contamination.

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SECTION 2

Answer any four (4) questions. All questions carry equal marks.

1. Briefly discuss the groundwater potential in the dry zone of Sri Lanka.
2. Briefly explain the direct and indirect methods of groundwater recharge estimation.
3. (a) Briefly discuss the components of drip irrigation system.
(b) Discuss the advantages and disadvantages of the drip irrigation method over the conventional irrigation methods.
4. Briefly explain the groundwater contamination and protection.
5. Describe the methods used in calculation of reference crop evapo transpiration and advantages and disadvantage of each method.
6. Write a brief note on any **three (03)** of the following.
 - (a) Tensiometer
 - (b) Nitrogen Cycle and nitrate in groundwater
 - (c) Valuation of Groundwater
 - (d) Salinity

END OF PAPER