



The Open University of Sri Lanka
Faculty of Engineering Technology

Bachelor of Industrial Studies Honors (Agriculture)

Final Examination- 2020/2021

AGX6283/AGI6232 Groundwater Resources Management

Date : 02-02-2022
Time : 0930-1230 hours

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

- 1) (a) Write a brief note on Ground water protection
(b) Discuss the methods of delineating groundwater protection zones.
- 2) (a) Briefly discuss the groundwater pollution in North Central Province of Sri Lanka with suitable examples and its consequences on human health.
(b) Suggest suitable adaptation measures to overcome the problems you identified in (a).
- 3) (a) Briefly explain the design and construction of tube wells.
(b) Discuss the principle behind three drilling methods; advantages and disadvantages of each method.
- 4) (a) Briefly explain the methodology for shallow groundwater resources management using a Flowchart
(b) Discuss how it could be used in existing and new agro well systems in Sri Lanka, with possible recommendations.
5. (a) Briefly discuss the components of sprinkler irrigation system and the advantages and disadvantages of the sprinkler irrigation method over the conventional irrigation methods.

(b)(i) Determine the required capacity of a sprinkler system to apply water at the rate of 15 mm/hr for the following situation: Two 200 metres long sprinkler lines are required. Fifteen sprinklers are spaced at 10 metre intervals on each line. The spacing between lines is 20 metres. (Indicate the assumptions you make)
(ii) Allowing 1 hour for moving each 200-metre sprinkler line described above, how many hours would be required to apply 50mm irrigation to a 16 hectare field?

- 6 Write short notes on any three (03) of the following
- (a) Household water purification systems
 - (b) Saltwater intrusion
 - (c) Economics of Groundwater
 - (d) Measurement of Evaporation of open water surface

End of the paper