



The Open University of Sri Lanka  
 Faculty of Engineering Technology  
 Diploma/Degree in Industrial Studies (Agriculture)  
 Final Examination- 2011/2012  
 AEI6132 Groundwater Resources Management

Date : 24-03-2012  
 Time : 0930-1230 hours

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

1. "Groundwater policy is essential for sustainable use of groundwater resources" critically analyse this statement on Sri Lankan context.
2. (a) Briefly discuss the groundwater contamination in Kalpitiya area 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. Briefly explain the geophysical methods in groundwater investigations used in Sri Lanka and discuss their advantages and disadvantages.
4. Briefly explain the methodology for shallow groundwater resources management and 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 12.5mm/hr for the following situation: Two 180 metres long sprinkler lines are required. Sixteen sprinklers are spaced at 12 metre intervals on each line. The spacing between lines is 18 metres. (Indicate the assumptions you make)  
 (ii) Allowing 1 hour for moving each 180 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) Salt water intrusion
  - (c) Economics of Groundwater
  - (d) Measurement of Evaporation of open water surface