



The Open University of Sri Lanka
 Faculty of Engineering Technology
 Industrial Studies (Agriculture) Programme
 Final Examination- 2012/2013

AEI6132 Groundwater Resources Management

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

1. (a) Explain the direct methods for recharge estimation and analyse the advantages and disadvantages.
 (b) Write a brief note on the water balance method for recharge estimation.
2. (a) Explain the difference between the crop evapotranspiration and the reference evapotranspiration.
 (b) Describe in detail the Penman method for calculation of reference evapotranspiration.
3. (a) Briefly explain the aquifer vulnerability assessment using a method for vulnerability approach.
 (b) Discuss the main aspects considered in developing an aquifer contamination susceptibility map.
4. Briefly explain the groundwater quality problems in Sri Lanka at present and your suggestions to overcome.
5. (a) Briefly discuss the advantages and disadvantages of the sprinkler irrigation method over the conventional irrigation methods.
 (b) Describe the moisture distribution and uniformity of coverage in sprinkler irrigation system.
 (c) Determine the system capacity for a sprinkler irrigation system to irrigate 16 hectares of Brinjal crop. Design moisture use rate is 5mm per day, moisture replaced in soil at each irrigation is 6cm. Irrigation efficiency is 70 per cent. Irrigation period is 10 days in a 12-day interval. The system is to be operated for 20 hours per day.
6. Write short notes on any three (03) of the following
 - (a) K_{oc} in Groundwater studies
 - (b) Bioaccumulation
 - (c) Biomagnification
 - (d) Valuation of Groundwater in Sri Lanka