AQ – 2943

Second Semester M. E. (Full Time) (Civil Engg.) (Geotechnical Engg.) Examination

GEOENVIRONMENTAL ENGINEERING

2 SFGE 4

P. Pages : 2

Time : Three Hours] [Max. Marks : 80

Note : (1) Solve any **five** questions.
(2) All questions carry marks as indicated.

1. (a) Discuss the characteristic of hazardous and non hazardous waste. 8

   (b) Explain the various sources of subsurface contamination. 8

2. (a) Discuss the cation exchange reactions and their significance on pollution. 8

   (b) Explain the subsurface contaminal transport and field evaluation procedure. 8

3. (a) What are various disposal methods for waste management ? Discuss their suitability. 8

   (b) Discuss the diffusion and dispersion process for contaminant transport. 8

4. (a) Explain the leachate detection, collection and removal system. 8

   (b) Explain in detail the single line and double line land fill system with neat sketches. 8

5. (a) State the requirements of impervious barriers for liners and cover in solid waste containment system. 8

   (b) Discuss the requirement of land fill construction site. 8

6. (a) Discuss the requirements of dumping site of muncipal solid waste to avoid the contamination of ground water table by leachate. 8

(b) In a development phase of an urban city a low lying area of about one square kilometer was selected for the dumping yard of municpal solid waste. The geotechnical investigations discovered that the area has top of 100 mm to 200 mm covering black catton soil followed by fine silly and upto 1000.0 mm depth. The topography of the area was having a uniform ground slope towards sourth west direction. A stream is flowing at a distance of 1 km away from the boundary of proposed site in the same direction. Suggest an appropriate methods to prevent the leachate to contaminate the stream. 8