No. of Printed Pages : 3

BICE-014

01563

B. TECH. (CIVIL ENGINEERING)
BTCLEVI

Term-End Examination

December, 2012

BICE-014 : ENVIRONMENTAL ENGINEERING-I

Time : 3 hours *Maximum Marks : 70*

*Note : Answer **any five** questions. Question No.1 is **compulsory**. Assume missing data if any.*

1. (a) What do you understand by 'equivalent pipe' in distribution network analysis ? **7x2=14**

   (b) Differentiate between Defluoridation and desalination.

   (c) What are the minor methods of disinfection ?

   (d) Name the different coagulents used in water treatment with its advantages.

   (e) Name the advanced water treatment techniques with its application.

   (f) Differentiate aeration and softening.

   (g) What is an Intake ? What are the factors governed in selection of site for an Intake ?

2. A 30cm diameter well penetrates 25m below the static water table. After 24 hours of pumping @ 5400 litres/minute, the water level in a test well at 90m in lowered by 0.53m, and in a well 30m away the drawdown is 1.11m. **14**

(a) What is the transmissibility of the aquifer ?

(b) Also determine the drawdown in the main well.

3. (a) What do you understand by continuous and intermittent system of water supply ? What are their relative advantages and disadvantages ? 7

(b) What are the different materials, which are commonly used for water supply pipes ? Discuss their comparative merits and demerits. 7

4. (a) What are the points should be considered in deciding the location of pumping stations ? 7

(b) Explain the significance of the following, with respect to water quality criteria. 7

(i) Turbidity

(ii) Chlorides

(iii) Nitrates

(iv) Sulphates and

(v) Iron

5. (a) Distinguish between slow sand and rapid sand fitters. 7

(b) What are the major requirements of a disinfectant ? 7

6. (a) Explain briefly the following process 7

(i) Break point chlorination and

(ii) Water Aeration

(b) Explain the techniques of dissolved solids removal from water. 7

7. (a) Discuss the various appurtenances used in the distribution system. 7

(b) What factors will you keep in mind while designing plumping system for water supply to a house ? 7

8. Write short notes on **(any two)** : **2x7=14**

(a) Removal of taste and odour

(b) Leak detection in pipe network.

(c) Pressure filter.