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BICE-014

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2015

BICE-014 : ENVIRONMENTAL ENGINEERING – I

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions. All questions carry equal marks.

1. (a) Describe the various methods of forecasting population. Which method will be considered most appropriate for forecasting the population of cities like Delhi, Mumbai, etc. ? Why ? 7
- (b) What is meant by hardness ? Differentiate between temporary and permanent hardness. 7
2. (a) What points should be considered in deciding the location of a pumping station ? 7
- (b) What are the different materials which are commonly used for water supply pipes ? Discuss their comparative merits and demerits. 7

3. (a) What are the common impurities found in natural sources of water ? Explain their effects upon its quality. 7
- (b) Discuss the various appurtenances used in the distribution system. 7
4. (a) What is coagulation ? What are its purposes ? Explain the working of clariflocculator with a neat sketch. 7
- (b) Compare in detail the Slow sand filter with Rapid sand filter. 7
5. (a) Explain the various techniques used to remove taste and odour from water. 7
- (b) State the necessity and requirements of a good disinfectant. 7
6. (a) Explain in detail the purification processes in natural systems . 7
- (b) Explain the Hardy Cross method used for pipe network analysis in water distribution system. 7
7. Write notes on the following : $2 \times 7 = 14$
- (a) Pipe appurtenances in laying water supply mains
- (b) Leak detection in pipe network

8. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Break Point Chlorination
 - (b) Pressure Filter
 - (c) Defluoridation
 - (d) Desalination
 - (e) Water-borne Diseases
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