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**BICE-014**

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# B. TECH. (CIVIL ENGINEERING)
# BTCLEVI

## Term-End Examination

## June, 2013

## 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) List out the physical and chemical parameters of water quality. **7x2=14**
   (b) What are the different types of pipe joints used in water conveyance system ?
   (c) What are the various types of water distribution network ?
   (d) Differentiate between sedimentation and coagulation.
   (e) What is defluoridation ? What are it's uses ?
   (f) Differentiate between pressure filter and gravity filter.
   (g) What is Aeration ? What are the different methods of it ?

2. (a) Describe various methods of forecasting population. Which method will be most appropriate for forecasting the population of cities like Delhi, Mumbai etc ? Why ? 7

(b) What is meant by variation in rate of demand ? What are the effects of variation on the design of various units of water supply system ? 7

3. (a) What are the different types of sub surface sources of water ? Explain the method of determination of yield of a well. 7

(b) What is meant by hardness ? Explain any one method of removal of hardness of boiler feed water. 7

4. (a) What is an Intake ? Explain with a neat sketch, a river Intake. 7

(b) Explain the Hardy-cross method used for pipe-network analysis in water distribution system. 7

5. (a) What is coagulation ? What are the purposes of it ? With a neat sketch explain the working of clariflocculator. 7

(b) Compare in detail Slow sand Filter and Rapid sand Filter. 7

6. (a) Explain the various techniques used to remove taste and odour from water. 7

(b) How will you determine the storage capacity of a reservoir using mass curve method ? 7

7. (a) State the necessity and requirements of a good disinfectant. 7

(b) What are the different types of chlorination in water treatment ? Give the importance of break point chlorination. 7

8. Write short notes on : 4x3.5=14

(a) Water borne diseases

(b) Leak detection in a water supply line

(c) Dissolved solids removal

(d) Coagulant aids