

Code: CE5T2

III B.Tech - I Semester – Regular Examinations - November 2014

**ENVIRONMENTAL ENGINEERING - I**  
**(CIVIL ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Discuss the various factors that influence the per capita demand of water consumption. 7 M

b) The population of a town as obtained from census report is as follows: 7 M

Census year	1931	1941	1951	1961	1971
Population	25623	34767	52877	69089	86656

Estimate the population of the town in the year 2011 by using Incremental Increase method.

2. a) What are the various sources used in water supply schemes? Discuss the factors that influence the selection of a source. 7 M

b) What is an Intake structure? Explain the difference between a Canal intake and a Lake intake. 7 M

3. a) Discuss in detail the various Physical and Chemical parameters to be tested in water quality analysis. 7 M
- b) Explain Membrane filter technique of bacteriological analysis. 7 M
4. a) Briefly explain the commonly used coagulants in water treatment with the help of reactions. 7 M
- b) What flow velocity of water is recommended in a continuous flow sedimentation tank of 3m deep and 40m long for effective removal of 0.025mm particles @25°C. Assume Sp. Gravity as 2.65, Kinematic viscosity of water as 0.01cm<sup>2</sup>/s. 7 M
5. a) Explain the working of a Rapid sand filter with the help of a neat sketch. 7 M
- b) Distinguish between Slow sand filters and Rapid sand filters. 7 M
6. a) Briefly explain different methods of disinfection adopted in water treatment. 7 M
- b) Explain Lime-soda process of water softening with reactions involved. 7 M

7. a) Explain Hardy Cross method of pipe network analysis. 7 M

b) Explain various layouts of distribution networks with their merits & demerits. 7 M

8. a) Explain One pipe and Two pipe system of plumbing. 7 M

b) Briefly explain the function of components of a House Service connection with a neat sketch. 7 M