

**BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY**  
**Question Bank (K-Scheme)**

**Name of subject: Water and Waste water Engineering**  
**Subject code: 314362**

**Unit Test: I**  
**Course: CE**  
**Semester: IV**

**CHAPTER 1 ( 12 marks)**

**(Sources, Quantity and Quality of Water)**

**(2 Marks)**

- a. List any four sources of surface water.
- b. What do you mean by demand of water
- c. Define Intake structure .
- d. Define design period .
- e. State the various methods of forecasting of population

**(4 Marks)**

- a. State the I.S. Standards for drinking water. i) pH ii) Turbidty iii) Total Solids iv) MPN/100ml
- b. ( i) Estimate the population at the end of year 2021 by incremental increase method  
Year 1971 1981 1991 2011    Population 79560 120320 160530 190670
- c. Enlist different types of Intakes. Explain anyone with neat sketch
- d. The following is the population data for a Town. Water supply scheme is to be designed for this town with a Design period of 30 years. Find the population at the end of year 2041 by Incremental increase method; also calculate total demand of water. Year 1971 1981 1991 2001 2011 Population 39701 50157 68107 93351 115307
- e. The population data for a town is given below. Forecast the population after three decades by Geometrical Increase method. Year 1980 1990 2000 2010 Population 67500 85350 107500 138000
- f. List various methods of forecasting of population. Explain Geometrical Increase method.
- g. Explain the necessity of analysis of water.
- h. State the precautions to be taken for collection of sample of water.
- i. State and explain factors affecting water demand

- j. State the importance of public health engineering
- k. Define design period and state factors affecting on it
- l. What is the need of analysis of water state the various tests on water
- m. Explain the procedure of collection of water sample for biological test.

## **CHAPTER 2 ( 18 marks)**

### **(Purification of Water)**

#### **(2 Marks)**

- a. Define aeration. Enlist different methods of aeration.
- b. Define Sedimentation. State different types of sedimentation tanks
- c. Define the term Coagulation.
- d. Define Filtration and State objects of Filtration .
- e. Define Disinfection. State its objects

#### **(4 Marks)**

- a. Explain Break point Chlorination
- b. Differentiate between slow sand filter and rapid sand filter
- c. Draw and label flow diagram of water treatment plant
- d. State methods of aeration Explain any one with Sketch .
- e. Briefly describe the process of Coagulation
- f. Explain with neat Sketch jar test
- g. Explain Zeolite process of water Softening
- h. Define residual chlorine. State its importance in disinfection.
- i. Discuss an importance of prevention of bores and borewell water source

## **CHAPTER 3 ( 12 marks )**

### **(Conveyance and Distribution of Water)**

#### **(2 Marks)**

- a. Enlist types of pipes.
- b. Name any four types of pipe joint
- c. Draw labeled sketch of grid iron system
- d. Why valves are provided in pipelines.

e. State different types of valves

**(4 Marks)**

- a. Draw a neat Sketch a pressure relief Valve
- b. Explain bell and Spigot joint with Sketch
- c. State functions of i) Air relief Valve ii) Non return Valve
- d. Differentiate between gravity and pumping distribution System
- e. Describe necessity and importance of any one type of service reservoir
- f. Describe grid iron system layout of distribution of water
- g. State the factors affecting the choice of pipe material for distribution of water
- h. Differentiate between dead end system and circular system
- i. Enlist different types of valves used in water supply pipeline explain any one with respect to use,location,and function
- j. Write advantages and disadvantages of gravity system and pumping system
- k. Draw a neat Sketch of expansion joint provided for water pipe line