OR

10. Write short notes on any three of the following: 14

i) Water pollution control acts.

ii) Requirements of a good domestic water meter and their types.

iii) Globe valve and Gate valve.

iv) Importance of public water supply schemes.

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Total No. of Questions : 10] *[Total No. of Printed Pages : 4*

Roll No .....

CE - 603

B.E. VI Semester

Examination, December 2014

Environmental Engineering - I

Time : Three Hours

Maximum Marks : 70

Note: i) Solve one complete question from each unit.
ii) Each full question is of 14 marks.
iii) Internal choice is given each unit.

Unit - I

1. a) State how the quantity of water for which a water supply scheme is to be designed, is estimated. Explain the purpose of the considerations involved in such an estimate. 7

b) What is meant by 'design periods' and 'population forecasts'? Why is the population forecast necessary in the design of public water supply schemes? Discuss the different methods employed for the purpose and their comparative merits and demerits. 7

OR

2. a) Write a note on variations in rate of demand. Explain clearly how you take into account these variations in the design of various units. 7

b) A city has following recorded population: 7

1951	1971	1991
50,000	1,10,000	1,60,000

Estimate:

i) The saturation population and

ii) Expected population in 2011.

Unit - II

3. a) State the comparative merits and demerits of the following materials used in the conveyance of water. 7

i) Cast iron

ii) Steel

iii) Concrete

b) Discuss briefly the procedure followed in laying and testing the water supply mains. 7

OR

4. a) Enumerate the common tests that should be carried out in the examination of water at laboratories. Attached to water treatment plants and explain the significance of each of them. 7

b) Mention different types of pumps used in water works practice and explain their merits and demerits. 7

Unit - III

5. Enumerate and discuss briefly the various physical and chemical treatment units installed in a water treatment plant for treating raw water. Draw a flow chart of units of water treatment plant for treating surface water and ground water separately. 14

OR

6. Write short notes on any three of the followings 14

i) Comparison between slow sand filter and rapid sand filter

ii) Coagulation and flocculation

iii) Disinfection of water against viruses

iv) Removal of iron and manganese from water.

Unit - IV

7. a) Discuss with the help of diagrams, various methods of laying out the distribution system. 7

b) How do you determine the capacity of reservoir? Discuss the hydrograph method for determining the storage capacity of equalising reservoir. 7

OR

8. Write short notes on any two of the following: 14

i) Hardy cross method

ii) Methods of water distribution

iii) Causes of water wastes, its detection and prevention

Unit - V

9. a) Discuss briefly the procedure commonly adopted for planning and designing of a rural water supply schemes. What precautions you would take to make the design economical. 10

b) Explain the various plumbing systems of drainage from buildings. 4