CE - 603

B.E. VI Semester

Examination, June 2013

Environmental Engineering - I

Time : Three Hours

Maximum Marks : 100 ***Minimum Pass Marks :35***

Note: *Attempt one complete question from each unit. Each full question is of 20 marks.*

Unit - I

1. a) Discuss various factors that affect average daily water consumption i.e. litres per capita per day. 10

   b) The following data shows the variation in population of a town from 1952 to 2002. Estimate the population of the city in the year 2032, using Geometrical increase method:

Year	Population
1952	72,000
1962	85,000
1972	1,10,500
1982	1,44,000
1992	1,84,000
2002	2,20,000

10

OR

2. a) Enlist & differentiate different surface and ground water sources. 10

b) Enlist different methods of forecasting population of a town. Explain "Incremental Increase Method". 10

Unit - II

3. a) What objections could be there if, (i) Turbidity, (ii) Chlorides, (iii) Nitrates, (iv) Fluoride, (v) Hardness are present in excess in water. 10

b) Describe the multiple tube fermentation technique for the determination of coliforms: 10

OR

4. a) Differentiate between : 10

i) Virus & Bacteria

ii) B-Coli & E-Coli

iii) Free ammonia & Albumin ammonia

iv) Coagulation & Flocculation

v) Nitrite & Nitrate

b) Write short notes on : 10

i) Water borne diseases

ii) Membrane Filter Technique

Unit - III

5. a) Discuss the design criterias of "sedimentation tank" design. 10

b) Compare slow sand filters with rapid sand filters. 10

OR

6. a) Describe the Jar Test experiment to determine the optimum dose of coagulant. Also draw sketch. 10

b) Explain the methods of removal of iron & manganese from water. Why is their removal necessary. 10

Unit - IV

7. a) State the comparative merits and demerits of the following materials used in the conveyance of water.
(i) Cast iron (ii) Steel & (iii) Concrete 10

b) Write short notes on : 10
(i) Gate valve (ii) Pipe corrosion. (iii) Reflux valve.

OR

8. a) Write a note on different water distribution networks. 10

b) Explain "Hardy Cross Method" used for pipe network analysis in water distribution system. 10

Unit - V

9. a) Describe P-trap, Q-trap, S-trap, Floor traps and Gully traps used in house drainage system. 10

b) Describe one-pipe system and two pipe system of plumbing through which discharge from sanitary fixtures in the buildings can be conveyed. 10

OR

10. a) Describe the method of financing and management of rural water supply projects. 10

b) Write short notes on : 10

i) Water pollution control act

ii) Domestic water supply service connection (sketch).

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