[Oct-17]

[ECR-305]
B.Tech. Degree Examination

Civil Engineering
V SEMESTER

ENVIRONMENTAL ENGINEERING
(Effective from the admitted batch 2015–16)

Time: 3 Hours Max. Marks: 60

Instructions: Each MODULE carries 12 marks.
Answer all MODULEs choosing one question from each MODULE.
All parts of the MODULE must be answered in one place only.
Figures in the right hand margin indicate marks allotted.

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MODULE-I

1. a) Write the difference between portable water and palatable water 3
b) The population of a town in three consecutive decades is 40,000; 100,000 and 130,000. Determine: (a) Saturation population; (b) Equation for logistic curve; (c) Expected population in next decade 9

OR

2. a) Write the goals to be achieved to have good water supply system 4
b) Why bacterial examination of water is important and explain any two methods for determination of acceptable & tolerable limits for human consumption as per IS code 8

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MODULE-II

3. a) What is the purpose of intake structure? 4
b) List and explain the types of pipes used in water supply system of buildings 8

OR

4. a) Write the purpose of Valves and Hydrants 4
b) Explain the factors to be dealt for designing both pressure and gravity pipelines 8

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MODULE-III

5. a) How the slow sand filter works? 4
b) Briefly explain the mechanism of removal of pathogens during disinfection using various methods 8
6. a) Briefly explain Perikinetic and Orthokinetic flocculation
   b) Write the principle involved and design criteria to be dealt for the setting tank

MODULE-IV

7. a) List the major techniques for iron and manganese removal from water
   b) Explain the oxidation process in detail for removal of iron

OR

8. a) Explain ozone water treatment technique for achieving taste and odour control
   b) List the major goals to be achieved through rural water supply initiation

MODULE-V

9. a) Write the assumptions involved in pipe network analysis
   b) Write the factors to be considered for the provision of adequate separation between water mains and sewer lines

OR

10. Write the sequential procedure for installation of water mains in individual house/apartments and also highlight the significant factors which affects the installation process

[2/V S/117]