Question Paper Code : 57175

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fifth Semester

Civil Engineering

CE 6503 – ENVIRONMENTAL ENGINEERING – I

(Regulations 2013)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is design period ? List any two factors influence it.
2. State the assumptions made in an incremental increase method to forecast population.
3. Draw any tow line diagrams of joints in pipe lines ?
4. How will you calculate total head in the design of pumps for water supply schemes ?
5. Define break point chlorination.
6. Differentiate disinfection and sterilization.
7. How do you remove iron and manganese from water ?
8. What do you meant by water softening ?
9. Mention the role of computer application in water distributing systems.
10. Write the various methods to find leakage in pipelines.

PART – B (5 × 16 = 80 Marks)

11. (a) Explain the laboratory procedure to determine chlorides, turbidity, sulphates and odour. (16)

OR

(b) (i) Explain the factors affecting the per capita demand of a town. (8)

(ii) Derive an expression for determining the discharge from an unconfined aquifer under steady flow conditions. (8)

12. (a) (i) Explain the functioning of a jet pump with neat sketch. (8)

(ii) Discuss the factors influencing the selection of a pump. (8)

OR

(b) What is intake structure ? Explain with neat sketches, the various type of intake structures based on sources. (16)

13. (a) Find the area of rapid sand filter required for a town having a population of 80,000 with an average rate of demand 180 lpcd. Assume suitable data for design. Draw the cross section of the designed filter. (16)

OR

(b) (i) Explain the sedimentation process used in water treatment plant. (8)

(ii) Draw the longitudinal section of a sedimentation tank indicting the various zones. (8)

14. (a) Write short notes on : (i) Desalination process, (ii) Membrane process. (8 + 8)

OR

(b) (i) Explain the activated carbon treatments and pollutants removed and advantages of the process. (8)

(ii) Explain the techniques involved in de-fluoridization. (8)

15. (a) (i) Explain the Hardy-Cross method of distribution network analysis. (8)

(ii) Write short notes on the detection and prevention of wastage of water. (8)

OR

(b) Discuss the various possible water distribution arrangements in multi-storaged buildings. (16)