Question Paper Code : 52771

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Fifth Semester

Civil Engineering

CE 6503 – ENVIRONMENTAL ENGINEERING – I

(Regulation 2013)

(Common to PTCE 6503 — Environmental Engineering for B.E. (Part-Time) for
Civil Engineering – Third Semester Regulation 2014)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the methods of population forecasting.

2. State the factors governing the selection of particular water source.

3. List functions of intake structure.

4. What are the different types of settling?

5. Write the nature of any four coagulants.

6. Write the function of sedimentation tanks.

7. What do you mean by adsorption capacity?

8. Distinguish between ultrafiltration and nanofiltration

9. Mention the role of computer application in water distributing systems.

10. Write the various methods to find leakage in pipelines.

11. (a) Explain about the various methods employed for population forecasting and what are the factors influencing the selection of a method of population for casting.

Or

(b) (i) Briefly discuss about the various types of aquifer's with neat sketch. (8)

(ii) Write down the water quality standards for drinking purpose as per B.I.S. (5)

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

(ii) Discuss the factors influencing the selection of a pump. (5)

Or

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

13. (a) (i) How many kg of bleaching powder with 25% available chlorine is required daily to treat 5 MLD of water with 3 mg/L of chlorine? (5)

(ii) With the help of neat sketch explain function and operation of slow sand filter. (8)

Or

(b) (i) Explain the design principles of flash mixer and flocculator. (6)

(ii) Design a clarifier for a population of 60000 persons. Percapita demand is 150 Lpcd. Peak demand 180% of average demand. Assume suitable data if necessary. (7)

14. (a) Brief about few recent and possible advancement in water filtration techniques.

Or

(b) Explain all membrane processes in detail.

15. (a) Find the flow in each pipe in the Loop shown in Fig. 15 (a). Use Hardy Cross method for analyzing the Loop. Consider C_H as 110 for all pipes.
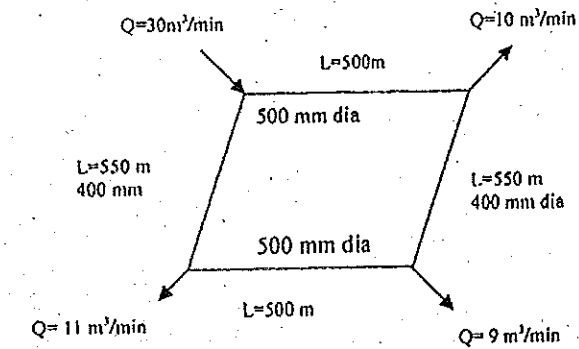

Fig. 15 (a)

Or

(b) What are the functions of service reservoir? Briefly outline the design aspects of service reservoir.

PART C — (1 × 15 = 15 marks)

16. (a) Briefly discuss about the various physic-chemical test on water and write their limitation for domestic and industrial purpose.

Or

(b) Design the rapid gravity sand filter for a flow of 20 MLD. Assume suitable design parameters.