Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 30094

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023.

Third Semester

Civil Engineering

CE 3303 — WATER SUPPLY AND WASTEWATER ENGINEERING

(Regulations 2021)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Name the various sources of water.

2.   What is meant by potable water?

3.   Give the types of aerators.

4.   Define defluoridation.

5.   Mention any two methods of water distribution network with its layout.

6.   State the components of service connection pipe.

7.   Enlist the materials used for constructing sewer pipes.

8.   Write down the plumping systems of sewage.

9.   What are the advantages of UASB reactor?

10. List out any four standards for discharges of sewage in surface water source.

PART B — (5 × 13 = 65 marks)

11. (a)   (i)   Describe the factors affecting the rate of water demand.   (6)

          (ii) Enumerate water borne diseases.   (7)

                                    Or

     (b)   Examine the river intake and canal intake.   (13)

12. (a) Discuss the slow sand filter and rapid sand filter with suitable diagram. (13)

Or

(b) Elaborate the methods used for removal of iron and manganese from water. (13)

13. (a) Classify various types of reservoirs with its function.

Or

(b) (i) Categorize the pipe fittings used in distribution network with neat sketch. (6)

(ii) Analyze water detection methods. (7)

14. (a) (i) Demonstrate the characteristics of sewage. (6)

(ii) Explain how to estimate sanitary sewage flow? (7)

Or

(b) Summarize the sewer appurtenances used for sewerage system. (13)

15. (a) Illustrate the working of trickling filter with its merits and demerits. (13)

Or

(b) Identify various stage of sludge digestion process and write how to dispose digested sludge. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Outline the physical and chemical analysis of drinking water. (15)

Or

(b) Assess the working of activated sludge process with flow diagram. (15)

———————