Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 31208

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Fifth Semester

Civil Engineering

CE 2304/CE 53/10111 CE 504 — ENVIRONMENTAL ENGINEERING — I

(Regulation 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the objective of water supply system?

2. Define design period.

3. Draw any two line diagram of joints in pipelines.

4. What is the difference between system curve and pump curve?

5. How to manage residue in water treatment plant?

6. List out the advantages of rapid sand filter.

7. Write down the principle of desalination process.

8. How do you regenerate softener?

9. How to detect leakages in pipelines?

10. What are the requirement of water distribution system?

PART B — (5 × 16 = 80 marks)

11. (a) The population of a town as per census records are given below. Forecast the population in the year 2020 and 2035 using arithmetical increase method and incremental increase method. Estimate the water demand at 135 lpcd for the year 2035. (16)

Year :	1961	1971	1981	1991	2001
Population :	39250	54390	68010	83630	99850

Or

(b) (i) Write the drinking water quality standards as per BIS. (10)

(ii) Explain the chemical characteristics of water. (6)

12. (a) With the help of schematic diagram, explain different type of water intake structures. (16)

Or

(b) How to select pumps and pipe materials for water supply systems? Explain in detail. (16)

13. (a) Design a rectangular sedimentation tank for 5 MLD flow. (16)

Or

(b) What is disinfection? What are the factors affecting disinfection? Explain the chlorination process. (16)

14. (a) Write short notes on :

(i) Membrane process (8)

(ii) Defluoridation. (8)

Or

(b) What are the functions of aerators? Explain the different types of aerators. (16)

15. (a) How to distribute water for multistoreyed building? Explain in detail. (16)

Or

(b) (i) What is the role of computer applications in water distribution systems? (8)

(ii) How to maintain the drinking water pipeline system? (8)

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