C 28954 (Pages : 2) Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2012

CE 04 703—ENVIRONMENTAL ENGINEERING

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*
Missing data, if any, may suitably be assumed.
IS Codes are permitted.

Part A

1. Explain briefly the components of a hydrograph.
2. Explain the maintenance of tube wells.
3. What is meant by the term "per capita demand" ?
4. Describe rain water harvesting.
5. What is the principle of aeration ?
6. Explain the membrane filter technique.
7. What is meant by the economical diameter of a rising main ?
8. With a neat sketch, explain the dead end system of distribution.

(8 × 5 = 40 marks)

Part B

9. Explain the different methods of determining the mean areal depth of precipitation over a basin covered by several rain-gauge stations. Indicate the most accurate method of determination giving reasons.

Or

10. What are Intake structures ? Write the factors considered for selecting a site for an intake structure. Also explain with a neat sketch the canal intake.

(15 marks)

11. The census data pertaining to a city given in table below. Estimate the population for the year 2020 by using :

Year	1931	1941	1951	1961	1971	1981
Population in thousands	350	466	994	1560	1623	1839

Also calculate the yearly water requirement assuming 270 lpcd.

Or

12. Mention the common impurities in water which should be taken into account in deciding the potability of sample. Describe the essential tests to be performed on such a sample.

(15 marks)

Turn over

13. With the help of a flow chart, explain in detail the sequence of treatment in a water treatment plant.

Or

14. Discuss the various forms of chlorination of water. Also calculate the dosage in mg/l required to disinfect a flow of 3 mld, if 1000 gm. of bleaching powder of 25 % strength is required to be used.

(15 marks)

15. Distinguish between :

    (i) Balancing reservoir and service reservoir.

    (ii) Continuous system and intermittent system of water supply.

    (iii) Water taps and bib cocks.

Or

16. How do you find the most economical size of a rising main ? List the appurtenances necessary to be installed on a rising main between the pumps and an overhead tank. Indicate their relative position on a line diagram and mention the function of each.

(15 marks)

[4 × 15 = 60 marks]