

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

Paper ID [CE309]

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B.Tech. (Sem. - 5th)

ENVIRONMENTAL ENGINEERING - I (CE - 309)

MAY 2008

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

(10 × 2 = 20)

Q1)

- a) Discuss the factors that influence per capita demand.
- b) Discuss Intermittent and continuous water supply.
- c) Give three major requirement of a disinfectant.
- d) Differentiate between temporary and permanent hardness.
- e) Distinguish between Breakpoint chlorination and double chlorination.
- f) Discuss the different physical tests for determining the suitability of drinking water.
- g) Differentiate between Loss of head and Negative head in Rapid sand filters.
- h) Differentiate between Carbonate and Non-Carbonate hardness.
- i) Describe "Fire demand" in water supply.
- j) Discuss causes and prevention of wastage of water.

Section - B

(4 × 5 = 20)

- Q2) State how the quantity of water for which a water supply scheme is to be designed is estimated. Explain the purpose of the considerations involved in such an estimate.
- Q3) What is meant by the variations in the rate of demand? What are the effects of these variations on the design of various units of water supply?
- Q4) What are the two major types of sources of water supplies? Discuss the comparative merits and de-merits of both these types of sources.
- Q5) What is meant by "Disinfection" in treating public water supply? What are the chemicals which are used as disinfectants and their merits.
- Q6) Explain the sedimentation process used in water treatment plant. Draw a neat sketch of a sedimentation tank in which coagulant is used.

Section - C

(2 × 10 = 20)

- Q7) What are the different materials which are commonly used for water supply pipes? Discuss their comparative merit and demerit.
- Q8) Distinguish between slow sand and rapid sand filters with reference to:
- (a) Rate of filtration.
 - (b) Filter media of sand.
 - (c) Period of cleaning.
 - (d) Loss of head.
- Q9) Describe with a neat sketch the working of a pressure filter. What are the relative advantages and disadvantages of this type over those of the gravity filters.