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Total No. of Questions : 09]

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Paper ID [CE309]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 5th)

ENVIRONMENTAL ENGINEERING - 1 (CE - 309)

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

Q1)

(10 × 2 = 20)

- a) Discuss quality standards of drinking water.
- b) Distinguish between Expansion joint and Flanged joint.
- c) Describe Beneficial uses of water.
- d) Describe population forecasting.
- e) Define mass curve method.
- f) Discuss the factors that influence per capita demand.
- g) Discuss Intermittent and continuous water supply.
- h) Give three major requirement of a disinfectant.
- i) Differentiate between temporary and permanent hardness.
- j) Discuss the different physical tests for determining the suitability of drinking water.

Section - B

(4 × 5 = 20)

- Q2) What are the different materials, which are commonly used for water supply pipes? Discuss their comparative merit and demerits.
- Q3) Distinguish between slow sand filters and rapid sand filters.
- Q4) Describe the working of a pressure filter. What are the relative advantages and disadvantages of this type over those of the gravity filters.
- Q5) What is meant by "Disinfection" in treating public water supply ? What are the chemicals which are used as disinfectants and their merits?
- Q6) State how the quantity of water for which a water supply scheme is to be designed, is estimated. Explain the purpose of the consideration's involved in such an estimate.

Section - C

(2 × 10 = 20)

- Q7) Describe Base exchange process. Give advantages and disadvantages of this method.
- Q8) Explain the sedimentation process used in water treatment plant. Draw a neat sketch of a sedimentation tank in which coagulant is used.
- Q9) What are the two major types of sources of water supplies ? Discuss the comparative merits and demerits of both these types of sources.