

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

B.Tech. (Sem. - 5th)
ENVIRONMENTAL ENGINEERING - I

SUBJECT CODE : CE - 309

Paper ID : [A0616]

[Note : Please fill subject code and paper ID on OMR]

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) What are the chemicals which are used as disinfectants?
- b) Define Base exchange process.
- c) What do you understand by continuous and intermittent system of water supply?
- d) Define per capita demand of water.
- e) Define population forecasting.
- f) Define surface and underground sources of water.
- g) Define mass curve method.
- h) How slow sand filter-differ from a rapid sand filter?
- i) Define chlorination and fluoridation.
- j) Why drinking water should possess a high degree of purity?

Section - B

(4 × 5 = 20)

Q2) Enumerate and discuss in brief the various physical, chemical and bacterial characteristics of testing of raw water supplies. What steps would you take in order to make them fit for drinking.

- Q3)** What are the different materials which are commonly used for water supply pipes? Discuss their comparative merits and demerits.
- Q4)** Explain the sedimentation process used in a water treatment plant. Draw a neat sketches of a sedimentation tank in which coagulant is used.
- Q5)** Define Base Exchange process. How will you treat swimming pool water.
- Q6)** What are the common impurities found in natural sources of water and explain their effects upon its quality.

Section - C

(2 × 10 = 20)

- Q7)** Distinguish between slow sand and rapid sand filters with reference to
- Rate of filtration.
 - Filter media of sand.
 - Period of cleaning.
 - Loss of head.
- Q8)** Explain briefly Mass curves and their use in determining storage capacity of a dam reservoir for obtaining a given yield.
- Q9)** What are the two major types of sources of water supplies? Discuss the comparative merits and demerits of both these types of sources.
