

[illegible]

B.Tech. (CE) (2012 to 2017) (Sem.-5)
ENVIRONMENTAL ENGINEERING-I
Subject Code : BTCE-505
M.Code : 70516

Max. Marks : 60

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

1. Answer briefly :

- a. What is the utility of alkalinity measurement in water?
- b. Name **any two** types of joints in water supply pipes and its utility.
- c. What is characteristics curve?
- d. What are the various methods for population forecast?
- e. How to measure flow rate in a closed pipe?
- f. What is coagulation?
- g. What is the basic principle of sedimentation?
- h. What is pressure relief valve?
- i. List two advantages of rotary pump.
- j. What are the methods for disinfection of water?

SECTION-B

2. Write short notes on fire demand alongwith various equations to estimate it.
3. What are the causes of variation in water demand? Discuss them.
4. With a neat figure, describe the various components of canal intakes and their functions.
5. What are different types of pumps used in water distribution system? Discuss **any one** of them in details.
6. Write the methods of :
 - a) desalination
 - b) deflouridation

SECTION-C

7. Design a slow sand filter bed from the following data :

Population= 50,000; per capita demand = 150 litres/day; rate of filtration = 180 litres/hour/sq. m; length of each bed = twice the width. Assume maximum demand is 1.8 times of the average daily demand.
8. Name various chemical and bacteriological tests of water before supplying to a community. Then discuss **any two** important chemical parameters and two bacteriological parameters.
9. Discuss the procedure of rainwater harvesting in a rural area to meet up the water demand with schematic diagram.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.