

Roll No. ....

**24289**

**B. Tech. 5th Semester (Civil Engg.)**

**Examination – December, 2016**

**WATER SUPPLY TREATMENT**

**Paper : CE-305-F**

*Time : Three Hours ]*

*[ Maximum Marks : 100*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Question No. 1 is *compulsory*. Students have to attempt *five* questions in total at least *one* question from each Section. Assume any data if missing. All questions carry equal marks.

1. (a) Write down different types of intakes. 5
- (b) How will you determine the optimum coagulation quantity by Jar test ? 5
- (c) Write down *five* problems which encounter in conveyance system. 5

- (d) How can you prevent wastage of water in distribution system? 5

### SECTION - A

2. What do you mean by "design period" and "Population forecasting"? Why the population forecast is necessary in design of public water supply schemes? Discuss the different methods employed for this purpose. 20
3. Describe the method of collecting water sample from different sources for its physical and chemical examination. Also explain what are the special precautions will be required for biological examination?

### SECTION - B

4. Explain the following in detail: 10 + 10
- (a) Slow sand filter
- (b) Rapid sand filter

5. Write down and explain the methods used for removal of taste and odour from water supply in detail. 20

### SECTION - C

6. What are the difference between Gravity system and pumping system? Also explain dual system in detail with neat and clean diagram. 20
7. Explain the methods to analyse the complex pipe network in detail. 10 + 10

### SECTION - D

8. Discuss the procedure commonly adopted for planning and designing of a distribution system in water supply scheme. What precautions should be taken to make the design economical? 20
9. What are the methods which are used for detecting leakage in distribution system? Explain any *two* in detail. 20