

- (b) What are the various factors which affect the selection of a type of pump and for selection of site ?  
8

### SECTION - D

8. What are the requirements of a good distribution system describe in brief various layouts of distribution systems ?  
15
9. Write short notes on sources of water pollution, types, and the effects of water pollution.  
15

Roll No. ....

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## B. Tech. 5th Semester (Civil Engg.) Examination – March, 2021

### WATER SUPPLY AND TREATMENT

Paper : PCC-CE-307-G

Time : Three hours ]

[ Maximum Marks : 75

*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. Attempt five questions in all, selecting one question from each Section. All questions carry equal marks.

1. (a) What is the necessity of water supply schemes in the present-day community ?  
(b) Why is population forecast necessary in the design of public water supply schemes ?  
(c) What do you understand by the biological examination of water ? Why is it necessary ?

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- (d) Write a short note on handling and storing of coagulants.
- (e) Define disinfection, what is its use ?
- (f) Enumerate the different types of pumps used in the water supply.  $2.5 \times 6 = 15$

### SECTION - A

2. (a) Draw a flow diagram of water supply engineering and describe in short what are the Essentials of a water supply scheme ? 7
- (b) What do you mean by the term water demand ? What would be the average water demand for our University ? If the design population is 10000 estimates the maximum hourly, maximum daily, and maximum monthly water demand. 8
3. (a) Discuss the different chemical tests to be made for determining the suitability of drinking water from a particular source. 10
- (b) What are the common impurities mostly found in natural water ? Explain their effect on the quality of water. 5

### SECTION - B

$$3 \times 5 = 15$$

4. Write short notes on :

- (a) aeration unit
- (b) sedimentation unit
- (c) coagulation and flocculation
- (d) filtration unit
- (e) mixing devices

5. (a) Why is the softening of water necessary ? Describe the Procedure of the lime-soda process for water softening. 7
- (b) Describe with the help of neat sketches the removal of iron and manganese from the water. 8

### SECTION - C

6. (a) What measure precautions are taken in handling and laying water pipelines ? 7
- (b) Discuss the comparative merits and demerits of cast iron pipe steel pipes and concrete pipes. 8
7. (a) What is the total lift of the pump ? How will you calculate the total horsepower required for a pump ? 7