

5 am to 10 am 75% of days supply
10 am to 4 pm 10%
4 pm to 9 pm 13%
9 pm to 5 am 2 %
The pumping is to be done for 8 hrs per day (8 am to 4 pm). Determine the storage capacity. 15

Roll No.

3204

**B. Tech. 5th Semester (Civil Engg.)
Examination – December, 2022**

WATER SUPPLY & 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 : Attempt any *five* questions. Attempt *one* question from each Section. Question No. 1 is *compulsory*.

All questions carry equal marks.

1. (a) Define per capita demand.
- (b) List out the standards for water quality.
- (c) List out advantages of rapid sand filter.
- (d) Mention the advantages of chlorine, as disinfectant.
- (e) What are Flocculators ?

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- (f) Name the types of intake according to their position.
- (g) Write any *two* appurtenances in water conveyance system.

(h) Where the ring system of water distribution system is adopted ?

(i) Write the methods of distribution of water.

(j) What is a standpipe ? 1.5 × 10 = 15

SECTION – I

2. Explain briefly : 5 × 3 = 15

(a) Different types of water demand.

(b) Factors affecting per capita demand of water.

(c) Factors affecting design period.

3. List different methods of populations forecasting. Explain briefly any *two* methods. 15

SECTION – II

4. What are the objectives of water treatment ? Draw a flow chart of conventional water treatment plant and indicate various units. 15

5. (a) It is required to supply water to a population of 30000 at per capita demand of 150 liters/day. The

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disinfectant used for chlorination is bleaching powder which contains 30% of available chlorine. Determine how much of bleaching powder is required annually at the waterworks if 0.3 ppm of chlorine dose is required for disinfection. 7

(b) With a neat sketch explain briefly about pulsatorclarifier. 8

SECTION – III

6. Explain the types of Conduits in detail with neat sketches. 15

7. (a) Explain the pumping system 7

(b) Enumerate different types of : 8

(i) Pipe appurtenances

(ii) Pipe materials

SECTION – IV

8. Explain the various methods of water distribution system. 15

9. For the water supply of a small rural town with the population of 10,000 with the rate of water supply as 120 lpcd. It is proposed to construct a distributing reservoir. The pattern of draw off is as under :

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P. T. O.