

24289

B.Tech. 5th Semester (F) Scheme (Civil)

Examination, December-2018

WATER SUPPLY TREATMENT

Paper- CE-305-F

Time allowed : 3 hours]

[Maximum marks : 100

Note : *Question no. 1 is compulsory and attempt any one question from each of the four sections. All questions carry equal marks.*

1. Write short notes on: 5×4=20
- (a) BOD
 - (b) pH value
 - (c) Chemical methods of removing suspended impurities from very large source of water.
 - (d) Phenomenon of Negative head
 - (e) Air valve and reflux valve

Section - A

2. In two periods each of 20 years, a city has grown from 50,000 to 1,50,000 and then 250,000. Determine 20
- (a) The saturation population
 - (b) The equation of the logistic curve
 - (c) The expected population after 15 years
3. Explain all the physical tests needed for testing the quantity of natural river water flowing over an alluvial bed. Also write down the procedure and instruments required for conducting these tests. 20

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Section - B

4. (a) Define and explain design principle of settling test. 10
 (b) Explain Super Chlorination and residual chlorine. 10
5. (a) Differentiate between slow sand filter, rapid sand filter and gravity filters. 10
 (b) Explain the action that takes place during filtration. 10

Section - C

6. (a) With the help of neat sketches, explain the various types of joints used in CI pipe. 10
 (b) List the advantages of CI pipe, AC pipes, PVC pipes. 10
7. (a) Explain the pumping system. 10
 (b) What are the distribution Reservoir? How these function? Explain briefly. 10

Section - D

8. What is meant by economic diameter of a rising main? How will you determine the economic diameter of rising main for pumping water from a filter plant to the service reservoir of a town water supply. 20
9. (a) Explain why water is softened. Describe with sketches the zeolite process of softening the hard water. 10
 (b) State the WHO international water quality standard relating to the presence of calcium, copper, total solids, chlorine, iron. 10