

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

21CV43

Fourth Semester B.E. Degree Examination, June/July 2024 Public Health Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the need for protected water supply. (08 Marks)
b. Explain in detail about the various types of water demands and list the factors affecting per capita demand. (12 Marks)

OR

- 2 a. Define design period of water supply and discuss the factors governing the design period. (10 Marks)
b. Explain in detail about physic – chemical characteristics of water and write the types of water sampling techniques. (10 Marks)

Module-2

- 3 a. Draw the layout of water treatment plant and explain the functions of each unit. (10 Marks)
b. Define sedimentation. Discuss the theory of sedimentation and also types of coagulants. (10 Marks)

OR

- 4 a. What is filtration? Explain the theory of filtration and filter materials. (10 Marks)
b. Explain the slow sand, rapid gravity and pressure filters. (10 Marks)

Module-3

- 5 a. What is disinfection? Discuss the minor methods of disinfection with merits and demerits. (10 Marks)
b. Explain in detail about the removal of permanent hardness in hard water lime-soda and Zeolite process. (10 Marks)

OR

- 6 Briefly discuss the sewage disposal methods and the sampling techniques of municipal waste water and its characteristics. (20 Marks)

Module-4

- 7 a. Draw the flow chart for municipal waste water. (10 Marks)
b. Explain the importance of screens in the waste water treatment plants and also write the important steps to be followed while designing the grit chamber. (10 Marks)

OR

- 8 a. Discuss the types of settlings and settling tanks. (10 Marks)
b. With a neat sketch, explain the conventional activated sludge process. (10 Marks)

Module-5

- 9 a. Draw and explain the two types of oxidation ditches. (10 Marks)
b. Explain in detail the principle of stabilization ponds and add a note on advantages and disadvantages of stabilization ponds. (10 Marks)

OR

- 10 a. Draw and explain the flow chart for sludge treatment and its disposal. (10 Marks)
b. Discuss the sludge thickening and its common methods in detail. (10 Marks)

* * * * *