

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination, Dec 2023 (Backlog)

B. Tech. in Civil Engineering,

Roll No.....

Course Code : CE1201 Public Health Engineering

Time: 2.5 hours

Max. Marks: 40

Instructions to students:

1. Write your roll number and Name on each sheet.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
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Q. 1 What is the water demand for different municipal usage?

4 Marks LOs 2, 3

Q. 2. Discuss the broad characteristics of untreated sewage and also write the significance of various parameters of sewage in designing Sewage treatment plants.

6 Marks LOs 1,2, 3

Q.3 What are the pollutants that should be removed before the sewage is considered safe for discharging back to the water body?

6 Marks LOs 1,2, 3

Q. 4 What is the purpose of providing a primary sedimentation tank in wastewater treatment? What is the expected BOD and SS removal in the primary sedimentation tank?

4 Marks LOs 3,4

Q. 5 Design a primary settling tank to treat wastewater with average flow rate of 15 MLD and peak flow of 25 MLD. Assume the following data as:

Detention time = 1.5 Hrs

Width 6.0 m

8 Marks LOs 3,4

Q. 6. Classify the screens in the sewage treatment plant on the basis of the opening size provided. Also, write the requirements and specifications for the design of bar screen.

4 Marks LOs 3,4

Q. 7 Design a Bar screen chamber for an average sewage flow of 25 MLD, a minimum sewage flow of 20 MLD and a maximum flow of 35 MLD. Take the following assumptions:

-Assume manual cleaning

Angle of inclination of bar with horizontal is 30°

Bar spacing provided is 30 mm

The number of bars provided is equal to 35

8 Marks LOs 3,4