

Note: All questions are compulsory.
All questions carry equal marks.
Assume suitable missing data, if any.

Q.1(a) Enumerate the major objectives of primary, secondary and tertiary treatment of wastewater.

(b) Define coagulants. Why are coagulants used in the sewage treatment? Name a few coagulants commonly used in wastewater treatment. [4][CO1]

Q.2 (a) What is the significance of roll velocity in aerated grit chambers?

(b) A rectangular grit chamber is designed to remove particles with diameter 0.2mm, specific gravity 2.65. A flow through velocity of 0.3m/sec will be maintained by proportional weir. Determine the channel dimensions for a maximum wastewater flow of 12 MLD. [4][CO2]

Q.3 (a) Write a short note on different types of screens.

(b) Estimate the screen requirement for a plant treating a peak flow of 50,000m³/day. [4][CO2]

Q.4 (a) Differentiate between conventional trickling filters and high-rate filters.

(b) Discuss in brief stabilisation ponds [4][CO4]

Q.5 Design a suitable rectangular sedimentation tank (provided with mechanical cleaning equipment) for treating the sewage from a city, provided with an assured public water supply system, with maximum daily demand of 8 million litres per day. [4][CO2]