

CE3303 WATER SUPPLY AND WASTE WATER ENGINEERING

IMPORTANT QUESTION

UNIT – I WATER SUPPLY

2 – Mark

1. Define water supply.
2. What is the estimation of subsurface water resources?
3. What is the prediction demand for water?
4. Define chemical analysis.
5. What is pumping and gravity schemes.

13 - Mark

1. Explain the estimation of surface and subsurface water resources.
2. Give detailed explanation for predicting demand water.
3. Describe impurities of water and their significance
4. Explain physical, chemical and bacteriological analysis.
5. Describe waterborne diseases.

UNIT – II WATER TREATMENT

2 - Mark

1. Define: Detention time and surface over flow rate.
2. Give the design criteria for flash mixer and state its use in water supply Scheme.
3. List out advantages of rapid sand filter
4. Mention the advantages of chlorine, as disinfectant.
5. State the function of sedimentation tanks.
6. Examine significance of velocity gradient in flash mixer.
7. Differentiate between unit operation and unit process.
8. Discuss the significances of velocity gradient in flocculator design.

9. Differentiate between sterilization and disinfection.
10. Describe the tests to be done to find the residual chlorine in water.
11. Illustrate the mechanism of disinfection process.
12. Discover the factors which depends the dose of coagulants.
13. Show the layout plan of water treatment plant.
14. Compare the objectives of Screen chamber and Grit chamber.
15. Explain the factors influencing settling of discrete particles
16. What are the steps required for the maintenance aspects of water treatment plant?
17. Explain the term coagulation
18. Rewrite stokes equation for finding settling velocity of particles
19. Write the nature of any four coagulants.
20. Summarize about break point chlorination,
21. What are Flocculators?
22. How to manage residue in water treatment plant?
23. Define detention time and surface overflow rate for a sedimentation tank
24. Classify filter into different categories.
25. What are the residues generated from a water treatment plant?

13 - Mark

1. Explain unit operation and processes of water treatment.
2. Explain functions and design of water treatment plant units.
3. Describe aerators of flash mixers.
4. Differentiate coagulation and flocculation
5. Explain plate and tube settlers.
6. State the desalination process

UNIT – III WATER STORAGE AND DISTRIBUTION

2 - mark

1. What is storage and balancing reservoirs?

2. Define distribution system.
3. Explain pipe fitting.
4. Describe the Analysis of distribution system.
5. What is leak detection?
6. Write about house service connection.

13 - Mark

1. Describe types, location and capacity of water storage and distribution.
2. Explain hydraulics of pipe line.
3. Give detailed explanation for valves including check and pressure reducing values.
4. Write about the maintenance of distribution system with a detailed reference.
5. What are the pumping station and their operation?

UNIT - IV PLANNING AND DESING OF SEWERAGE SYSTEM

2- Mark

1. Define time of Concentration.
2. Define sewage.
3. Name the sewage characteristics with which organic matter concentration is expressed.
4. Show the BOD demand curve.
5. Examine the necessity of legal requirements and effluents disposal of sewage.
6. Identify the significance of BOD/COD ratio.
7. Differentiate between dry weather flow and wet weather flow.
8. Discuss the various sources of waste water.
9. Discuss how do you estimate storm run-off?
10. List out the sources of domestic sewage.
11. Examine the impacts of nutrients on water bodies?
12. What is the use of manhole in sewerage system?

13. List out the various sewer appurtenances.
14. Explain the necessity of wastewater characterization.
15. Distinguish between Self Cleaning velocity and non-scouring velocity.
16. Differentiate between one pipe and two pipe system.
17. State the advantages of egg-shaped sewer sections.
18. The 5-day BOD of sewage is 240 mg/l. Invent the BOD load in Kg/d for 100
19. List out the types of sewerage system.
20. Explain the pollution control board norms for effluent discharge into streams.
21. How will you save rain water at household level?
22. What is trap? State its quality requirements.
23. When does it become necessary to provide manhole in sewerage system?
24. What is meant by the term population equivalent?

13 - Mark

1. Explain the characteristics and composition of sewage.
2. Describe the estimation of sanitary sewage flow.
3. State the hydraulics of flow in sanitary sewers.
4. Explain the pumping system of drainage.

UNIT – V SEWAGE TREATMENT AND DISPOSAL

2 - Mark

1. List the objectives of Secondary and Tertiary treatment of sewage.
2. Define sludge solids retention time in ASP design.
3. Identify the modified forms of conventional ASP.
4. What is the function of aeration in Activated Sludge Process?
5. When will you prefer anaerobic treatment of sewage over an aerobic process?
6. Define sludge volume index.
7. Discuss the term re-circulation ratio in trickling filter.
8. Distinguish between suspended growth processes and attached growth processes with suitable examples.
9. Illustrate how advanced treatment of sewage is different from conventional

treatment system.

10. Classify trickling filter and state its types?
11. Examine hydraulic loading rate of a trickling filter?
12. State the advantages of UASB reactor.
13. Compare the oxidation ditch with oxidation pond.
14. What is the difference between reclamation and reuse of sewage.
15. Distinguish between HRT and SRT.
16. What is meant by MLVSS?
17. Differentiate between aerobic pond and anaerobic pond.
18. Summarize about sludge recycling.
19. Explain how do you determine organic loading rate of a trickling filter?
20. Compare activated sludge process and trickling filter process of sewage treatment.
21. Write the formula for recirculation factor.
22. Define F/M ratio.
23. List out the types of high rate filters.

13 - Mark

1. Explain the objectives of sewage treatment and disposal.
2. Explain sequencing batch reactor (SBR)
3. Describe reclamation and reuse of sewage.
4. State the recent advances in sewage treatment.
5. Write long note for the disposal of sludge.