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Question Paper Code: U9973

B.E. / B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Open Elective

Chemical Engineering

21UCH973-DRINKING WATER SUPPLY AND TREATMENT

(Common to All Engineering branches)

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following indicates the component of a water supply scheme? CO1- U
(a) Impure water (b) Chlorination of water
(c) Sub-surface water (d) Intake of the water
2. An aquifer can hold water _____ and the state of water is _____. CO1- U
(a) Permanently – State of flow (b) Temporarily – State of flow
(c) Permanent – State of stagnancy (d) Temporary – State of stagnancy
3. The enlarged end of a cast iron pipe is called CO1-U
(a) Lead (b) Socket (c) Hemp (d) Spigot end
4. Which material is used for pipes which are in contact with milk or product? CO1-U
(a) Stainless steel (b) Copper
(c) Ceramic (d) Plastic
5. The tanks built with mechanical means for continuous removal of solids being deposited by sedimentation are called _____. CO1-U
(a) Clarifiers (b) Settling basins (c) Sedimentation tanks (d) Eco-ponds

6. A flocculated suspension refers to a mixture or dispersion of solid particles in a liquid where the particles have come together and formed larger clusters or aggregates called _____. CO1-U
- (a) Colloid (b) Flocs
(c) Ion (d) Polymer
7. In which process, the fluoride content of water is raised? CO1- U
- (a) Chlorination (b) fluoridation
(c) Defluoridation (d) Flocculation
8. The non-agitated fermentations are carried out in vessels of a height/diameter ratio of _____. CO1- U
- (a) 1:2 (b) 5:1 (c) 3:2 (d) 4:1
9. If plenty of water is not available, the supply of water is divided into zones and each zone is supplied with water for fixed hours in a day. As the water is supplied after intervals, it is called an CO1- U
- (a) Continuous supply (b) Fixed supply
(c) Intermittent supply (d) Low supply
10. Which of the following does not act as a major factor that effects per capita demand? CO1- U
- (a) Human activity (b) Industrial activities
(c) Usage of water (d) Placement of pipe

PART – B (5 x 2= 10 Marks)

11. How do you classify climate change? CO2- App
12. Define a pump capacity. CO1- U
13. List out the various types of sedimentation tanks. CO3 -Ana
14. What is water softening process? CO1 -U
15. List any two types of leak detection methods. CO3 -Ana

PART – C (5 x 16= 80Marks)

16. (a) Discuss the selection of sources to meet the water quality standards and its impact due to climate change. CO3- Ana (16)
- Or
- (b) Analyze the differences between surface water and groundwater and evaluate their significance in water resource management and environmental sustainability. CO3- Ana (16)

17. (a) Discuss in detail the conduits used for water supply. CO1- U (16)
Or
(b) Explain the working principle of water-spout. CO1- U (16)
18. (a) With a neat sketch, briefly explain the design of the Chemical feed system for water treatment. CO2- App (16)
Or
(b) Write the working principle of water treatment plant with a neat sketch. CO2- App (16)
19. (a) Explain in detail the types of aerators. CO1- U (16)
Or
(b) Categorize the methods of Defluoridation techniques. CO1- U (16)
20. (a) Draw a schematic diagram of a Water Supply to Buildings and explain in detail. CO2- App (16)
Or
(b) Classify the different types of plumbing drawings and explain each in detail. CO2- App (16)

