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Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U3104

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Third Semester

Civil Engineering

21UCE304 - Water Supply Engineering

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The maximum permissible turbidity for drinking water CO1- U

   (a) 35NTU (b) 10NTU (c) 20NTU (d) 50NTU

2. Distribution mains of any water supply, is normally designed for its average daily requirement CO2- App

   (a) 100% (b) 150% (c) 200% (d) 225%

3. After cleaning a slow sand filter, the filtered water is not used for CO4- App

   (a) 6 hours to 12 hours (b) 12 hours to 18 hours

   (c) 18 hours to 24 hours (d) 24 hours to 36 hours

4. The purpose of recarbonation after lime soda treatment is CO4- App

   (a) remove excess soda (b) remove non carbonate hardness

   (c)recover lime (d) convert precipitates to soluble form

5. Distribution mains of any water supply, is normally designed for its average daily requirement CO6- App

   (a) 100% (b) 150% (c) 200% (d) 250%

PART – B (5 x 3= 15 Marks)

6. What are the various types of water demand? CO1- U

7. What are the different types of pumps used commonly for pumping the water? CO2- App

8. Give the design criteria for f lash mixer and state its use in water supply Scheme? CO3- App

9. How do you remove iron and manganese from water? CO4- App

10. What is the role of computer application in water supply system and list some software's CO6- App

PART – C (5 x 16= 80Marks)

11. (a) Describe how you would arrive at the total quantity of water to be supplied for a metropolitan area. CO1- U (16)

Or

(b) Explain about fire demand-its characteristics and the method of estimating it. CO1- U (16)

12. (a) Classify the types of intakes. Also explain the working of a reservoir intake with a neat sketch. CO2- App (16)

Or

(b) Classify different types of pipe materials used in the water transmission CO2- App (16)

13. (a) Develop the design for a rectangular sedimentation tank for 5MLD flow. CO3- App (16)

Or

(b) Write the design principles of flash mixer and flocculator. CO3- App (16)

14. (a) Illustrate with the diagram of DM plant and explain the mechanism of cation and anions removal. CO4- App (16)

Or

(b) Formulate the design parameters for Demineralization process and state the resins types available in the market. CO4- App (16)

15. (a) What are the functions of service reservoir? Briefly outline the design Aspects of Service Reservoir? CO6- App (16)

Or

(b) How would you estimate the storage capacity of reservoir?. Explain the methods available. CO6- App (16)