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

Question Paper Code: U3104

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

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. Minimum Domestic Water Consumption for Indian and Cities with Full Flushing Systems as per IS: 1172-1993 is CO1- U

   (a) 200 (l/h/d) (b) 210 (l/h/d) (c)220 (l/h/d) (d) 230 (l/h/d)

2. Most commonly used pump for lifting water in water supply mains, is CO1- U

   (a) axialflow pump (b) reciprocating pump (c) rotary type pump (d) centrifugal pumps

3. Removal of Tastes and odour is done by _____ in water treatment. CO1- U

   (a) Aeration (b) Screening (c) Coagulation (d) Softening

4. Pick up the incorrect statement from the following: CO1- U

   (a) Iron salts produce heavy flocks and hence remove more suspended matter

   (b) Iron salts remove hydrogen sulphides

   (c) Iron salts can be used over a limited range of pH values

   (d) Iron salts impart corrosiveness to water

5. Water is supplied all 24 hours in the day is referred as CO1- U

   (a) Continuous System (b) Intermittent System

   (c) Non-Gravity System (d) Gravity System

PART – B (5 x 3= 15 Marks)

6.	What are the methods of population forecasting?	CO1- U	
7.	How the corrosion of metal pipes is reduced?	CO1- U	
8.	Define: Sedimentation.	CO1- U	
9.	What are the methods of removing permanent hardness?	CO1- U	
10.	List the components of water distribution systems.	CO1- U	

PART – C (5 x 16= 80 Marks)

11.	(a)	Explain in detail about Public Water Supply System with a typical flow diagram of a Water Supply Scheme.	CO1- U	(16)
		Or		
	(b)	Write about the Classification of Sources of Water with neat sketches.	CO1- U	(16)
12.	(a)	Analyse the applications of River Intakes, Canal Intakes and Portable Intakes.	CO3- Ana	(16)
		Or		
	(b)	Analyse the different types of Pumps and Pipes used in Plumbing in terms of Water Supply.	CO3- Ana	(16)
13.	(a)	Develop the design for a rectangular sedimentation tank for 5MLD flow.	CO3- Ana	(16)
		Or		
	(b)	Develop the design of slow sand filter for a town of 30,000 population, the average daily demand being 135/ litres/head/day. The maximum demand may be taken as 1.5 times the average.	CO3- Ana	(16)
14.	(a)	Explain in detail about Aeration in Water Treatment.	CO1- U	(16)
		Or		
	(b)	Explain in details about Fluoridation and Defluoridisation.	CO1- U	(16)
15.	(a)	Explain in detail about the Requirements and Components of Water Distribution with suitable case example.	CO1- U	(16)
		Or		
	(b)	Explain the Plumbing Systems in a Building with Ground Floor with 2 upper floors with a neat sketch.	CO1- U	(16)