A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 55104

B.E./B.Tech. DEGREE EXAMINATION, DEC 2021

Fifth Semester

Civil Engineering

15UCE504 ENVIRONMENTAL ENGINEERING

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The suitable method for forecasting population for a young and rapidly developing city is CO1 R

   (a) Arithmetic mean method (b) Geometric mean method
   (c) Comparative graphical method (d) None of these

2. The devices which are installed for draining water from different sources, are called CO1- R

   (a) Filters (b) Intakes (c) Outlets (d) Inlets

3. Slow sand filters when compared to rapid gravity filters, may normally CO2- R

   (a) 5 times slower (b) 10 times slower (c) 20 times slower (d) 30 times slower

4. Activated carbon is used in water treatment for removing CO2- R

   (a) Colour (b) Tastes and odours (c) Turbidity (d) Corrosiveness

5. The maximum pressure, which a water pipe is subjected to during its operation is CO3- R

   (a) Pipe pressure (b) Working pressure (c) Design pressure (d) Test pressure

6. Air - valves are usually provided in pressure pipes of water main - lines CO3- R

(a) At low points (b) At pipe joints

(c) At summits (d) Near junction of service line

7. The most suitable section of a sewer in a separate sewerage system is CO4- R

(a) Rectangular (b) Circular (c) Egg shape (d) Parabolic

8. Corrosion of concrete sewers occurs due to CO4- R

(a) Aerobic decomposition of sewage solids

(b) Anaerobic decomposition of sewage solids

(c) High pH value if the sewage

(d) None of the above

9. Water seal in traps generally varies from CO5- R

(a) 25-50 mm (b) 10-50 mm (c) 25-75mm (d) 50-100 mm

10. In primary settling tank, suspended solids are reduced from CO5- R

(a) 10 to 20% (b) 20 to 40% (c) 40 to 70% (d) 70 to 90 %

PART – B (5 x 2= 10Marks)

11. Define: Design period CO1- R

12. Differentiate between temporary and permanent hardness. CO2- U

13. List out the different types of distribution layout. CO3- U

14. Differentiate sewage flow and storm water run-off. CO4- U

15. What is biogas recovery? CO5- U

PART – C (5 x 16= 80Marks)

16. (a) What are the various sources of water? Discuss them with reference to their quality and quantity of water. CO1- U (16)

Or

(b) Sketch and describe a river intake. Enumerate the factors to be considered for selection of site for a river intake. CO1- U (16)

17.	(a)	Explain the process of sedimentation in the treatment of water. Discuss the difference between plain sedimentation and coagulation. State the design data in each case.	CO2- U	(16)
		Or		
	(b)	Explain the water softening process and desalination techniques.	CO2- U	(16)
18.	(a)	Explain with neat sketch of the layout of distribution systems which are commonly used in india.	CO3- U	(16)
		Or		
	(b)	Explain various types of distribution system for water supply	CO3- U	(16)
19.	(a)	(i) Discuss the significance of total solids and BOD in determining the characteristics of sewage.	CO4- U	(8)
		(ii) Discuss the systems of sewerage with its merits and demerits.	CO4- U	(8)
		Or		
	(b)	(i) Write down the procedure for laying and testing of sewer lines with neat diagram.	CO4- U	(8)
		(ii) Describe about the various types of pumps used for lifting the sewage.	CO4- U	(8)
20.	(a)	Describe about the component parts of septic tank, its advantages and disadvantages with neat sketches.	CO5- U	(16)
		Or		
	(b)	Write short notes on	CO4- U	(8)
		(i) Wastewater reclamation		
		(ii) Sewage disposal to sea water.	CO4- U	(8)

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