Question Paper Code: R18A32CE06

R18

ANURAG Engineering College

(An Autonomous Institution)

III B.Tech II Semester Supplementary Examinations, Dec–2023/Jan-2024

ENVIRONMENTAL ENGINEERING

(CIVIL ENGINEERING)

Time: 3 Hours **Max.Marks:75**

Section – A (Short Answer type questions) (25 Marks)

Answer All Questions

		Course Outcome	B.T Level	Marks
1.	Define the water demand?	CO1	L1	2M
2.	What are the considerations for selection of water source?	CO1	L2	3M
3.	What is sedimentation?	CO2	L2	2M
4.	Define rapid gravity filters?	CO2	L1	3M
5.	What is the role of service reservoir in the distribution system?	CO3	L2	2M
6.	Define time of concentration.	CO3	L1	3M
7.	Why decomposers are used in sewage treatment plants?	CO4	L1	2M
8.	Explain the COD & BOD.	CO4	L2	3M
9.	Draw the flow diagram of waste water treatment plant.	CO5	L1	2M
10.	What are factors affecting sludge tank?	CO5	L2	3M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	Explain the types of infiltration gallery? Explain with neat sketch.	CO1	L2	10M
	OR			
B)	Consider the following data and estimate the population forecast by the methods: i) Arithmetic increase method ii) Geometric increase method iii) Incremental increase method	CO1	L3	10M

YEAR	1951	1961	1971	1981	1991	2001	2011
POPULATION	35642	39487	46816	57869	70458	78543	89521

12. A)	What is coagulant? Explain about jar test to estimate optimum dosage of coagulant.	CO2	L3	10M
	OR			
B)	Explain the working principle of slow and rapid gravity filters.	CO2	L2	10M
13. A)	What is distribution system? Explain different layouts used for it.	CO3	L3	10M
	OR			
B)	Explain the principles and design of biological treatment.	CO3	L2	10M
14. A)	What are the characteristics of sewage? Explain about BOD and COD.	CO4	L1&L2	10M
	OR			
B)	List and explain the components that are involved in pump house and house drainage.	CO4	L1&L3	10M

15. A)	Explain the Construction and design of oxidation ponds.	CO5	L3	10M
	OR			
B)	What is septic tank? Explain the working principles and design of septic tank.	CO5	L1&L3	10M