Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code : 90019

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024
Fifth Semester
Biotechnology
U19BTV11 – WASTE WATER TREATMENT
(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Write down five important physical parameters of wastewater.	2	K1	CO1
2.	What are the important biological parameters of wastewater?	2	K1	CO1
3.	List out the Components of wastewater.	2	K2	CO2
4.	Mention any two major objectives of environmental auditing.	2	K2	CO2
5.	Define adsorption.	2	K2	CO3
6.	What are the importance of aeration in biological waste water treatment?	2	K2	CO3
7.	Under what conditions one has to choose biological oxidation using lagoons, Give one example.	2	K1	CO4
8.	State the principle of operation of Trickling Filters.	2	K1	CO4
9.	What are the importance of tertiary treatments?	2	K1	CO5
10.	State the principle of operation of air stripping and give one case study example.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain the water quality requirement for the discharge of industrial waste water as per Indian pollution control board norms.	13	K2	CO1
		(OR)			
	b)	Discuss elaborately on water purification by chemical processing methods.	13	K2	CO1
12.	a)	Describe the general outline of industrial water treatment.	13	K3	CO2
		(OR)			
	b)	Describe briefly about Occupational Safety and Health Act. (OSHA)	13	K2	CO2
13.	a)	Describe the process of removal of color by different methods.	13	K2	CO3
		(OR)			
	b)	Discuss the effects of fluorides on human health and the process fluoridation and defluorination.	13	K3	CO3
14.	a)	Explain Up Flow Anaerobic Sludge Blanket (UASB) reactor for effluent treatment.	13	K3	CO4
		(OR)			
	b)	Discuss the process of biological oxidation by lagoons and stabilization basins methods.	13	K3	CO4
15.	a)	Explain five advanced wastewater treatment process.	13	K2	CO5
		(OR)			
	b)	Explain the process of sludge disposal by different methods.	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Explain briefly on municipal waste water treatment process.	15	K2	CO1
		(OR)			
	b)	Describe comprehensive idea of primary, secondary, and tertiary treatment of wastewater.	15	K3	CO1