

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***First Semester**Environmental Engineering***PEVT2403 - Physical and Chemical Treatment Systems for Water and Waste Water***Regulations - 2024**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Name the water quality indices.	L2	1	2
2.	List the types of reactor.	L2	1	2
3.	Why maintenance is important for primary treatment units?	L2	2	2
4.	Distinguish coagulation and sedimentation.	L2	2	2
5.	Mention the different types of aeration.	L2	3	2
6.	State the different types of filters in Municipal water treatment plants.	L1	3	2
7.	Define water softening.	L1	4	2
8.	Distinguish between hydraulic profile and PID.	L2	4	2
9.	What is the basic principle involved in the design of grit chamber?	L2	5	2
10.	Compare and contrast the difference between equalization and neutralizations.	L1	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16= 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Compare batch and continuous reactors in terms of reactor kinetics.	L2	1	8
	ii With the help of neat sketch compare complete mix, plug flow and packed bed reactors.	L2	1	8
	Or			
	b Explain the various physio-chemical characteristics of sewage and state their environmental significance.	L2	1	16
12.	a Discuss in briefly the various types of settling and design considerations of sedimentation tanks.	L3	2	16
	OR			
	b Explain the principles of Chemical treatment Process involved in Textile Industries.	L3	2	16
13.	a i Give Short notes about clariflocculation.	L3	3	8
	ii Describe the clarification process in water treatment.	L3	3	8
	Or			
	b What are sand filters? Discuss its types with neat sketch.	L3	3	16

14.	a	What is meant by softening? Explain the different methods of Water Softening.	L3	4	16
		Or			
	b	Discuss in detail about the methods of demineralization.	L3	4	16
15.	a	Outline sludge thickening and explain the methods used for sludge thickening process. Also discuss about the recent advances in sludge treatment.	L3	5	16
		Or			
	b	How does the oil separator work in water treatment process? Explain different types of oil separators.	L3	5	16