Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Second Semester

Environmental Engineering

PEVE2410 - Geo Environmental Engineering

Regulations - 2024

Duration : 3 Hrs *Maximum : 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q.No	*Questions*	*BLT*	*CO*	*Marks*
1.	Define Geo-Environmental Engineering.	L1	1	2
2.	Distinguish between inorganic and organic toxic chemicals with examples.	L2	1	2
3.	What are chemical mass transfer processes in environmental engineering?	L1	2	2
4.	Define in-situ barriers and their role in containment.	L2	2	2
5.	What is the purpose of surface caps in waste containment?	L2	3	2
6.	Define risk assessment in the context of contaminated site management.	L2	3	2
7.	What is soil vapor extraction?	L1	4	2
8.	Explain the concept of phytoremediation.	L2	4	2
9.	What is the pump and treat method in groundwater remediation?	L1	5	2
10.	Define bioremediation in the context of groundwater treatment.	L1	5	2

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

Q.No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	Discuss the emergence and evolution of Geo-Environmental Engineering, emphasizing its significance in modern environmental protection.	L2	1	16
		Or			
	b	Explain the properties of soils, their composition, and their importance in addressing environmental contamination.	L2	1	16
12.	a	Explain the various transport processes involved in contaminant movement and how they impact environmental contamination. Illustrate with examples.	L2	2	16
		Or			
	b	Discuss contaminant fate modeling, its applications in environmental engineering, and how it helps predict the movement of pollutants in landfills, surface impoundments, and groundwater.	L2	2	16
13.	a	Discuss the various sources of subsurface contamination and provide a detailed analysis of the different remediation approaches.	L3	3	16
		Or			
	b	Explain the process of contaminated site characterization, risk assessment, and the formulation of a remedial strategy for contaminated sites.	L3	3	16

14.	a	Explain in detail the various methods of soil remediation, including soil vapour extraction, soil washing, and stabilization.	L3	4	16
		Or			
	b	Discuss in-depth bioremediation and phytoremediation as techniques for soil remediation.	L3	4	16
15.	a	Discuss the various methods of groundwater remediation, such as pump and treat, in-situ flushing, and permeable reactive barriers.	L3	5	16
		Or			
	b	Explain the concept of monitored natural attenuation and its application in groundwater remediation. Discuss its advantages, limitations, and environmental implications.	L3	5	16