

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Fifth Semester

Civil Engineering

CE3015 – Geoenvironmental Engineering

Regulations - 2021

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.	Outline the role of geo-environmental engineering in managing environmental issues related to soil and groundwater contamination.	L2	1	2
2.	List any two factors that influence the interaction between soil and pollutants.	L2	1	2
3.	Define the term ion exchange.	L1	2	2
4.	Define diffusion and explain how it contributes to contaminant movement in groundwater.	L2	2	2
5.	List out the types of stabilization.	L1	3	2
6.	How does in-situ air sparging work in groundwater remediation?	L2	3	2
7.	Outline the primary sources of municipal solid waste, and why is it important to understand the characteristics of waste?	L2	4	2
8.	Name one key environmental law that regulates landfill operations.	L1	4	2
9.	Explain the primary challenges associated with the disposal of scrap tires, and how can they be repurposed.	L2	5	2
10.	Summarize the environmental advantages of converting wood waste into biomass energy.	L2	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 Discuss the environmental and health consequences of soil pollution, particularly with respect to its impact on ecosystems and human health.	L2	1	16
	Or			
	b Discuss the various techniques employed in Geo-environmental Engineering for soil remediation.	L2	1	16
12.	a Explain the role of biological processes in the degradation and transformation of contaminants in the subsurface.	L3	2	16

Or

	b	Explain the importance of volatilization and biodegradation in contaminant remediation.	L3	2	16
13.	a	Discuss the use of groundwater pumping systems and subsurface drainage for the management and treatment of contaminated sites.	L2	3	16
		Or			
	b	Explain the difference between bioremediation and phytoremediation as soil remediation techniques.	L2	3	16
14.	a	Discuss the challenges associated with leachate management in landfills. What strategies can be implemented to mitigate these challenges?	L2	4	16
		Or			
	b	Describe the major components of a landfill. How does each component contribute to the overall functioning and environmental safety of the landfill?	L2	4	16
15.	a	Evaluate emerging trends in waste management and material reuse.	L3	5	16
		Or			
	b	Examine the challenges associated with plastic waste in the environment. Discuss the physical properties of different types of plastics and evaluate innovative methods for recycling or repurposing plastic waste.	L3	5	16