

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)*

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026

*First Semester**Common to all Branches*

CY3151 / UCHT24104 - ENGINEERING CHEMISTRY

*Regulations – 2021 & 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.	What is break point chlorination?	L1	1	2
2.	How to differentiate scale and sludge?	L2	1	2
3.	Distinguish bulk particles and nanoparticles.	L2	2	2
4.	What are the characteristics of nanowires.	L1	2	2
5.	Write the number of phases and components in the following heterogeneous system: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}_{(s)} \rightleftharpoons \text{CuSO}_4 \cdot 3\text{H}_2\text{O}_{(s)} + 2\text{H}_2\text{O}_{(g)}$	L2	3	2
6.	What are whiskers?	L1	3	2
7.	What is Power Alcohol? Mention the advantage.	L1	4	2
8.	Define explosive range.	L1	4	2
9.	Distinguish between nuclear fission & fusion.	L2	5	2
10.	Outline the requirements of a battery.	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 Describe with a neat sketch the various steps in the treatment of water for municipal supply. Or	L2	1	16
	b i What is reverse osmosis? How is sea water purified using this technique?	L2	1	8
	ii Describe the demineralization process of water softening. Explain the reactions involved in it with a neat diagram.	L2	1	8
12.	a Explain in detail the synthesis of nano materials using i. Laser ablation ii. Chemical vapor deposition method (CVD) Or	L2	2	16
	b Discuss the applications of nano materials in the field of Medicine, Electronics and Energy sectors.	L2	2	16

13.	a	Draw a neat phase diagram and explain the lead- silver system? Briefly write about Pattinson's process.	L2	3	16
		Or			
	b	What are composite materials? Discuss some important types of fibre – reinforced composites.	L2	3	16
14.	a i	Explain proximate analysis of coal. How is it carried out? What is its significance?	L3	4	8
	ii	Describe the manufacture of gasoline by Bergius process.	L3	4	8
		Or			
	b	Define flue gas. How the analysis of flue gas is done by Orsat apparatus. What conclusion can be drawn from the experiment? What is the significance of this analysis?	L3	4	16
15.	a	What is photovoltaic cell? Explain the principle, construction, working and applications of photovoltaic cell with a neat diagram.	L2	5	16
		Or			
	b	What is fuel cell? Describe the construction and functioning of Hydrogen Oxygen fuel cell with a suitable block diagram.	L2	5	16
