

Reg.No.: 

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

**Question Paper Code: 40002**

**B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS –JAN. / FEB. 2025**

**Second Semester**

**Computer Science and Engineering**

**U23CH201– ENGINEERING CHEMISTRY**

**(Common to Information Technology, Biotechnology and**

**Computer Science and Technology)**

**(Regulation 2023)**

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL the questions**

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

**PART – A**

**(10 x 2 = 20 Marks)**

Q.No.	Questions	Marks	KL	CO
1.	Distinguish between hard and soft water.	2	K2	CO1
2.	What is calgon conditioning?	2	K1	CO1
3.	Define Graft copolymer and give its structure.	2	K2	CO2
4.	Classify the types of polymers based on the stereo specificity.	2	K2	CO2
5.	Recall the differences between nano particles and bulk materials.	2	K2	CO3
6.	Identify and mention the types of Carbon Nano tubes.	2	K3	CO3
7.	What do you mean by renewable energy Sources?	2	K1	CO4
8.	List the types of Batteries with examples.	2	K1	CO4
9.	State Pilling bedworth rule.	2	K2	CO5
10.	Mention two functions of thinner in paints.	2	K2	CO5

## PART – B

(5 x 16 = 80 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	i. Identify what are boiler troubles. How are they caused? Suggest steps to minimize the boiler troubles.	10	K3	CO1
	ii. Compare carbonate and phosphate conditioning methods.	6	K4	CO1
	(OR)			
b)	i. Discuss the de-mineralisation process of water softening. Explain the reactions involved.	10	K3	CO1
	ii. Explain the Reverse Osmosis process of water purification.	6	K3	CO1
12. a)	i. Explain the preparation, properties and uses of PMMA and PC.	10	K3	CO2
	ii. Distinguish between Thermoplastics and Thermosets.	6	K2	CO2
	(OR)			
b)	i. Identify and deduce the reaction mechanism of Free radical Polymerization.	8	K3	CO2
	ii. Explain the addition polymerization and condensation polymerization with examples.	8	K3	CO2
13. a)	Identify and compare chemical vapour deposition and LASER ablation method of synthesizing nano particles.	16	K3	CO3
	(OR)			
b)	i. Explain the synthesis of nano materials by hydrothermal and solvo thermal methods.	10	K1	CO3
	ii. Point out any 6 applications of nano materials based on medical field.	6	K3	CO3
14. a)	Explain the working of solar cell with the help of a schematic diagram.	16	K2	CO4
	(OR)			
b)	Develop a neat diagram, explain the working principle of Lead acid batteries with cell reaction and advantages.	16	K3	CO4
15. a)	How an underground pipeline can be protected from corrosion by anodic protection and impressed current cathodic protection method?	16	K3	CO5
	(OR)			
b)	Explain how are metals protected by Electroless plating.	16	K2	CO5