

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: 40003

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

First Semester

Electrical and Electronics Engineering

U19CH105 – ENGINEERING CHEMISTRY

(Common to ECE & BME)

(Regulation 2019)

Time : Three Hours

Maximum : 100 Marks

Answer ALL the questions

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

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	What are scales and sludges?	2	K1	CO1
2.	Compare hard and soft water.	2	K2	CO1
3.	List the uses of Poly Ethylene.	2	K1	CO2
4.	Recall any two examples for copolymer.	2	K1	CO2
5.	What are nanowires?	2	K1	CO3
6.	Distinguish between molecules and bulk materials.	2	K3	CO3
7.	What are the functions of wind farms?	2	K1	CO4
8.	What are the fuels and electrolytes used in Hydrogen-oxygen fuel cells?	2	K1	CO4
9.	Why does Zinc corrode faster than Iron?	2	K1	CO5
10.	Recall the functions of Vehicle in paints.	2	K1	CO5

PART – B

(5 x 16 = 80 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Explain with a neat diagram Ion exchange process of water softening.	16	K2	CO1
	(OR)			
b)	How is internal treatment of boiler fed water carried out?	16	K1	CO1
12. a)	i. What are Plastics? Mention the characteristics and uses of plastics?	6	K1	CO2
	ii. Outline the Free radical mechanism of addition polymerization.	10	K2	
	(OR)			
b)	Draw and explain the structure of Novaloc and Resole. Give the uses of Bakelite.	16	K2	CO2
13. a)	Identify and describe the methods of synthesizing nanomaterials using chemical vapour deposition and laser ablation methods with a neat diagram.	16	K3	CO3
	(OR)			
b)	Classify and explain the different structures of Carbon Nanotubes.	16	K2	CO3
14. a)	Explain the working of Solar cell with the help of a schematic diagram.	16	K2	CO4
	(OR)			
b)	Explain the construction and working of Lead-storage battery. Give the cell reaction and advantages of the battery.	16	K2	CO4
15. a)	Summarize the chemical corrosion method with its mechanism .	16	K2	CO5
	(OR)			
b)	How underground pipeline can be protected from corrosion by Sacrificial anodic protection and impressed current cathodic protection methods?	16	K1	CO5