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Reg.No.:								

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

Question Paper Code: 4002

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – AUG. / SEP. 2023

First Semester

Electrical and Electronics Engineering

U19CH105 – ENGINEERING CHEMISTRY

(Regulation 2019)

(Common to Electronics and Communication Engineering & Biomedical Engineering)

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.	Distinguish between Temporary hardness and Permanent hardness.	2	K3	CO1
2.	What is calgon? Give the chemical reaction of calgon in water treatment?	2	K3	CO1
3.	Define Degree of polymerization.	2	K1	CO2
4.	What is Tacticity?	2	K2	CO2
5.	Mention the types of carbon nanotube?	2	K2	CO3
6.	Point out some important application of nanowires.	2	K2	CO3
7.	Give any two advantages of wind mills.	2	K3	CO4
8.	What are the applications of Pb acid battery?	2	K2	CO4
9.	State Pilling-Bedworth rule. What is its significance?	2	K3	CO5
10.	What is meant by electroless plating? Give an example.	2	K2	CO5

PART – B

(5 x 16 = 80 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Discuss the troubles faced by the boilers when impurewater fed into it.	16	K4	CO1
		(OR)			
	b)	Explicate the Ion exchange process with a neat diagram.	16	K2	CO1
12.	a)	i. Sketch the free radical mechanism of addition polymerization.	10	K3	CO2
		ii. Distinguish between Thermoplastics and Thermosets.	6	K3	
		(OR)			
	b)	Give the preparation, properties and uses of Nylon 6, 6 and Bakelite.	16	K2	CO2
13.	a)	Elucidate the LASER ablation and Sol-Gel methods of synthesizing nano materials with a neat diagram.	16	K2	CO3
		(OR)			
	b)	What are nanomaterials? Mention important applications of nanomaterials in electronics and medical field.	16	K2	CO3
14.	a)	Give an account of solar cells working and applications with a neat diagram.	16	K2	CO4
		(OR)			
	b)	Express your view on the construction and working of NICAD battery. Explain the process of recharging and discharging in the battery.	16	K2	CO4
15.	a)	What is electroplating? Write short note on electro gold plating on copper and discuss its applications.	16	K3	CO5
		(OR)			
	b)	Explain the corrosion control methods			
		i. Sacrificial anodic protection	8	K3	CO5
		ii. Impressed current cathodic protection.	8		