O.P.Code: 23HS0803	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year I Semester Regular Examinations February-2024

ENGINEERING CHEMISTRY

(Common to CE & ME)

Time: 3 Hours **Max. Marks: 70**

PART-A

(Answer all the Questions 10×2=20 Marks)

1	a	Define hard water and soft water.	CO1	L1	2M
	b	What is caustic embrittlement?	CO1	L1	2M
	c	Define standard electrode potential.	CO2	L1	2M
	d	What are fuel cells?	CO2	L1	2M
	e	What are the properties of Thiokol rubbers?	CO3	L1	2M
	f	Define gross calorific value of a fuel.	CO4	L1	2M
	g	What is meant by reinforcement?	CO5	L1	2M
	h	Define flash point.	CO5	L1	2M
	i	What is chemisorption? Give an example.	CO6	L1	2M
	j	What are nanoparticles?	CO6	L1	2M

PART-B

(Answer all the Questions 5×10=50 Marks)

UNIT-I

2	a	Explain about desalination of sea water by Reverse osmosis.	CO1	L2	5M
	b	Explain the purification of brackish water by Electrodialysis method.	CO1	L2	5M
		OR			
3		Explain about any three boiler troubles and its treatment methods.	CO1	L2	10M

UNIT-II

4	a	Explain the construction and working of Nickel-cadmium battery.	CO2	L2	5M
	b	What is electroplating? Explain electroplating of copper.	CO2	L2	5M
		OR			
5		Derive the Nernst equation for a single electrode potential and write its applications.	CO2	L2	10M

UNIT-III

6	a	Explain the chain growth and step growth of polymerization with examples.	CO3	L2	5M
	b	Discuss the synthesis, properties and applications of Nylon – 6, 6.	CO3	L2	5M
		OR			
7	a	Explain the Proximate analysis of coal with its significance.	CO4	L2	6M
	b	What is octane number and Cetane number? How can it be improved?	CO4	L1	4M

UNIT-IV

8	a	Determine the viscosity of lubricating oil by Redwood Viscometer.	CO5	L3	5M
	b	Discuss the properties of composite materials.	CO5	L2	5M
		OR			
9		Explain about the manufacturing of Portland Cement in detail.	CO5	L2	10M

UNIT-V

10	a	Explain various types of adsorptions isotherm.	CO6	L2	5M
	b	Discuss the applications of nanomaterials in catalysis and medicine.	CO6	L2	5M
		OR			
11	a	Discuss Langmuir adsorption isotherms.	CO6	L2	5M
	b	Describe the synthesis of colloids by Braggs method.	CO6	L2	5M

***** END *****