14CY103 (R14)

Hall Ticket Number:

I/IV B.Tech (Supplementary) DEGREE EXAMINATION

November, 2019 **Common for all Branches**

First Semester **Engineering Chemistry-I**

Time: Three Hours **Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)

a Define alkalinity of water?
b Write any two examples for coagulants
c What is meant by colloidal conditioning?
d Define Polymer
e Write any two applications of PVC.
f Write the types of adsorption.
g Define calorific value of fuel.
h Write the main applications of solar cells
i Define carbonization of coal
j Write any two applications of alumina.
k Define composites.
l Define flash and fire points.

UNIT – I

2	(a)	Compare between hard water and soft water.	4M
	(b)	Explain the following i).Boiler corrosion ii). prevention methods of scale	8M
		OR	
3	(a)	Discuss any three disinfection methods.	4M
	(b)	Discuss the method of treatment of brackish water by Electro dialysis	8M
		UNIT – II	
4	(a)	Distinguish between addition and condensation polymerization	5M
	(b)	Explain the mechanism of free radical polymerization	7M
		OR	
5	(a)	Write the preparation and uses of i) TEFLON ii) Nylon 6,6	6M
	(b)	Explain Longmuir adsorption isotherm	6M
		UNIT – III	
6	(a)	Define calorific value of a fuel. Explain the determination of calorific value of solid fuel by Bomb calorimeter with neat labeled diagram	8M
	(b)	Explain proximate analysis of coal	4M
		OR	
7	(a)	Explain Otto-Hoffman by product method for carbonization of coal	6M
	(b)	Explain the construction and working of Lead-Acid storage battery	6M
		UNIT – IV	
8	(a)	Explain briefly i) Refractoriness ii) Refractoriness	8M
	(b)	Explain briefly about polymer matrix composites	4M
		OR	
9	(a)	Define abrasives. Explain the types of abrasives with examples	5M
	(b)	Define lubricants. Explain the mechanism of lubrcation	7M