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# PRESIDENCY UNIVERSITY

BENGALURU

## End - Term Examinations – MAY 2025

Date: 27-05-2025

Time: 01:00 pm – 04:00 pm

School: SOE/SOCSE	Program: B. Tech- Physics Cycle	
Course Code: CHE1017	Course Name: Applied Chemistry	
Semester: II	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04
Marks	24	29	21	26

### Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

### Part A

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1.	What is meant by degree of polymerization?	2 Marks	L1	C01
2.	Mention two criteria of conduction in polymers.	2 Marks	L1	C01
3.	What is standard electrode potential?	2 Marks	L1	C02
4.	Describe the two processes in electrochemistry?	2 Marks	L1	C02
5.	Define electroplating.	2 Marks	L1	C03
6.	Write two secondary factors that affect the rate of corrosion.	2 Marks	L1	C03
7.	Define corrosion.	2 Marks	L1	C03
8.	Why is hardness always expressed in terms of equivalents of Calcium carbonate?	2 Marks	L1	C04
9.	Mention any two disadvantages of hard water.	2 Marks	L1	C04
10.	What is the total hardness of water. Mention it's any unit.	2 Marks	L1	C04

### Part B

Answer the Questions.

Total Marks 80M

11.	a.	Discuss the synthesis, properties and Application of Bakelite.	10 Marks	L1	C01
Or					

12.	a.	Distinguish between addition and condensation polymerization. List the applications of conducting polymers.	10 Marks	L1	CO1
13.	a.	Discuss the differences between thermoplastic and thermosetting polymers.	10 Marks	L1	CO1
Or					
14.	a.	What are elastomers? Discuss synthesis, application of silicone rubber.	10 Marks	L1	CO1
15.	a.	Mention the anode and cathode for a Zn-Cu Galvanic cell, write the half-cell, overall cell reactions, and provide the cell representation.	10 Marks	L2	CO2
Or					
16.	a.	Give the construction, cell reactions and emf of a dry cell with neat diagram.	10 Marks	L2	CO2
17.	a.	Give the construction, working principle, cell reactions and applications of a H <sub>2</sub> -O <sub>2</sub> fuel cell.	10 Marks	L2	CO2
	b.	Discuss the difference between battery and fuel cell.	5 marks	L2	CO2
Or					
18.	a.	Give the construction, cell reactions, emf and working principle of a lead acid battery.	10 Marks	L2	CO2
	b.	List the applications of electrochemical series.	5 Marks	L2	CO2
19.	a.	List out the types of corrosion and discuss differential metal corrosion.	10 Marks	L2	CO3
	b.	Discuss electrochemical theory of corrosion with relevant reactions.	5 Marks	L2	CO3
Or					
20.	a.	What is Protective Coating? Discuss Anodic coating and cathodic coating with examples.	10 Marks	L2	CO3
	b.	What are the effects of corrosion in daily life?	5 Marks	L2	CO3
21.	a.	List the impurities present in wastewater. Give the specifications of drinking water.	10 Marks	L2	CO4
	b.	What are Boiler troubles? Discuss Priming and foaming formation. How to prevent these troubles?	10 Marks	L2	CO4
Or					
22.	a.	Calculate the Total hardness, Temporary Hardness and Permanent Hardness of a water sample containing: Ca(HCO <sub>3</sub> ) <sub>2</sub> =60 ppm, Mg(HCO <sub>3</sub> ) <sub>2</sub> =120 ppm, CaSO <sub>4</sub> =150 ppm, MgSO <sub>4</sub> =55 ppm, MgCl <sub>2</sub> =35 ppm. (Atomic Weights: Ca:40, Mg: 24, H: 1, C: 12, O:16, S: 32, Cl: 35.5, N: 14).	10 Marks	L2	CO4
	b.	Differentiate between temporary hardness and permanent hardness of water sample. Describe the process of desalination of water by reverse osmosis with neat diagram.	10 Marks	L2	CO4