

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

I B.TECH I SEMESTER END REGULAR EXAMINATIONS, FEB - 2023

APPLIED CHEMISTRY

(Common to EEE,CSE,AIDS Branches)

Time: 3 hours

Max. Marks: 70

Answer all the questions from each UNIT (5X14=70M)

Q.No.		Questions	Marks	CO	KL
UNIT-I					
1.	a)	Write the synthesis, properties and applications of poly vinyl chloride.	[7M]	1	1
	b)	Describe the emulsion polymerization.	[7M]	1	2
OR					
2.	a)	Explain the functions of different ingredients used in compounding plastics.	[7M]	1	2
	b)	Write a note on fiber reinforced plastics (FRP).	[7M]	1	1
UNIT-II					
3.	a)	Describe the working principle, construction and chemistry of Ni-Cd cell.	[7M]	2	2
	b)	Describe the working principle, construction and chemistry of Li-ion cell.	[7M]	2	2
OR					
4.	a)	Illustrate the electrochemical mechanism of rusting of iron in humid atmosphere. Mention any four factors that affect the rate of corrosion.	[7M]	2	4
	b)	What is cathodic protection? Discuss the sacrificial anode and impressed current techniques for prevention of corrosion.	[7M]	2	1
UNIT-III					
5.	a)	What is a liquid crystal? Discuss about the polymorphic behavior of thermotropic liquid crystals with examples.	[7M]	3	1
	b)	Give a brief note on the synthesis, properties and applications of carbon nanotubes.	[7M]	3	3
OR					
6.	a)	Discuss about type-I & type-II super conductors with its examples.	[7M]	3	2
	b)	How can you synthesis semi conducting material by using zone refining method.	[7M]	3	4
UNIT-IV					
7.	a)	Give a brief note on principle, instrumentation and applications of UV-Visible Spectroscopy?	[7M]	4	3
	b)	Discuss the principle, instrumentation and applications of NMR Spectroscopy.	[7M]	4	2
OR					
8.	a)	Describe the synthesis, properties and applications of Aspirin.	[7M]	4	2
	b)	Write the synthesis, properties and applications of paracetamol?	[7M]	4	1
UNIT-V					
9.	a)	How does a photovoltaic cell work? How do you synthesize a p/n junction material for photovoltaic cell?	[7M]	5	4
	b)	Illustrate the construction and working of silicon photovoltaic cell.	[7M]	5	4
OR					

10.	a)	What is geothermal energy? How is it used to generate electrical power? Discuss its merits and limitations.	[7M]	5	1
	b)	How can you obtain electricity from hydroelectric power plant? Explain the advantages and disadvantages of hydroelectric power plant.	[7M]	5	4
