H.T.No: | | | | | | | | | | | Course Code: **241CH002**

ADITYA UNIVERSITY

B.Tech – I Semester End Examinations Regular – Dec 2024

APPLIED CHEMISTRY

(Common to CSE &AIML)

Time: 3 hours **Max. Marks: 50**

Answer ONE question from each unit
All Questions Carry Equal Marks
All parts of the questions must be answered at one place only

UNIT-I					
1	a	Compare and contrast thermoplastics and thermo-setting plastics in terms of their preparation, properties, and applications?	L2	CO1	[5M]
	b	Write a note on Bakelite preparation, properties and its applications?	L1	CO1	[5M]
		(OR)			
2	a	Write about Biodegradable polymers with Poly glycolic acid examples?	L1	CO1	[5M]
	b	Interpret the mechanism of conduction in Polyacetylene (Doping)?	L2	CO1	[5M]
UNIT-II					
3	a	Explain about working and cell reactions of Lithium Ion battery?	L2	CO2	[5M]
	b	Outline the Nernst equation for a cell potential and explain its significance?	L2	CO2	[5M]
		(OR)			
4	a	Discuss the construction and applications of methanol-oxygen fuel cells?	L2	CO2	[5M]
	b	Discuss the principle and working of a hydrogen-oxygen fuel cell?	L2	CO2	[5M]
UNIT-III					
5	a	Describe the techniques used for global optimization in molecular modeling.	L2	CO3	[5M]
	b	Discuss the prediction of molecular properties using computational chemistry?	L3	CO3	[5M]
		(OR)			
6	a	Interpret the principles and applications of computational quantum chemistry?	L2	CO3	[5M]
	b	Explain the conformational sampling technique using Monte Carlo?	L2	CO3	[5M]
UNIT-IV					
7	a	Define nano materials and fullerenes?	L1	CO4	[4M]
	b	Define thermoresponsive materials. Explain their importance with examples	L1	CO4	[6M]
		(OR)			
8	a	Describe the synthesis of Nano materials by Sol-Gel technique?	L1	CO4	[5M]
	b	Explain briefly how nanomaterials are characterized by SEM method and TEM method?	L2	CO4	[5M]
UNIT-V					
9	a	Define hardness of water? Explain the determination of hardness using EDTA method?	L2	CO5	[5M]
	b	Explain the desalination of water by electro dialysis?	L2	CO5	[5M]
		(OR)			
10	a	Explain the process of recycling lithium-ion batteries	L2	CO5	[7M]
	b	Describe the toxic materials used in electronic product manufacturing and explain the reducing/preventive methods?	L1	CO5	[3M]

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