



	InSem Examination-II Summer 2024		
	Exam Seat No.:		
	Academic Year: 2023-2024	Semester: IV	
	Name of Programme: S.Y.B.Tech. (Chemical Engineering)	Pattern: 2022	
	Name of Course: Chemistry II	Course Code: CHE222011	
	Max. Marks: 30	Duration: 1 Hr.	

	<p>Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.</p> <ol style="list-style-type: none">1. This question paper contains 2 page(s).2. Answer to each new question is to be started on a new page.3. Assume suitable data wherever required, but justify it.4. Draw the neat labelled diagrams, wherever necessary.5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.	
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Question No. 1 Attempt following Question

- a) What are enzymes? How do they function give mechanism of it. (4) CO1

OR

- b) Give the chemical reaction which shows the presence of Six carbon atoms and five -OH groups in glucose molecule (4) CO1

- c) Give the traditional and green pathway for synthesis of Indigo dye. (5) CO1

OR

- d) Give the traditional and green pathway for synthesis of polycarbonate. (5) CO1

- e) Illustrate the any three principles of Green Chemistry. (6) CO1

OR

- f) Demonstrate the parameter used to measure efficiency of green chemistry. (6) CO1

Question No. 2 Attempt following Question

- a) Calculate the EAN of (i) $[\text{Cu}(\text{NH}_3)_4]^{+1}$ (ii) $[\text{Cr}(\text{CO})_6]$ (Given Atomic number of Cu and Cr = 29 and 24) (4) CO2

OR

- b) Write IUPAC name of the complex (i) $[\text{Cr}(\text{NH}_3)_4\text{Cl}_2]^+$ and (ii) $[\text{Pt}(\text{NH}_3)_3 \text{Br NO}_2 \text{Cl}]\text{Cl}$. (4) CO2

- c) Show the bonding and magnetic property in $[\text{Co}(\text{H}_2\text{O})_6]^{3+}$ using valence bond theory. (5) CO2

OR

- d) Predict the hybridisation and geometry of coordination compounds $[\text{Ni}(\text{CN})_4]^{2-}$ on the basis of valence bond theory with diagram showing electron filling. (5) CO2

- e) Discuss the crystal field splitting of d-orbitals in octahedral complexes with diagram. (6) CO2

OR

- f) Discuss the variable oxidation state property shown by transition elements. (6) CO2

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