

FIRST SEMESTER FYUGP EXAMINATION NOVEMBER 2024**MINOR****CHE1MN107 BASIC ORGANIC AND INORGANIC CHEMISTRY**

Time : 2 Hrs

Maximum Marks : 70

BL - Bloom's Taxonomy Level (1 to 6)

CO - Course Outcome

Section A		Ceiling Marks : 24		
Answer all questions. Each carries 3 marks.				
No.	Question	M	BL	CO
1.	What is a coordinate bond? Give examples.	3	2	CO2
2.	Which has a higher first ionization enthalpy: nitrogen or oxygen? Why?	3	4	CO3
3.	Explain why the electron affinity of Be is negative. Or Explain why the electron gain enthalpy of Be is positive.	3	5	CO3
4.	Formic acid and chloroacetic acid are stronger than acetic acid. Justify it.	3	3	CO4
5.	Give an example for Corey-House reaction?	3	2	CO5
6.	How will you synthesize propane from methane?	3	5	CO5
7.	Outline a general method of preparation of aldehyde and ketone from alcohol.	3	2	CO5
8.	Write the products obtained by the addition of water to an aldehyde and a ketone.	3	3	CO5
9.	Discuss comparatively the basicity of ammonia, methylamine and ethylamine.	3	3	CO5
10.	Give the reaction scheme for the preparation of methyl orange.	3	5	CO5
Section B		Ceiling Marks : 36		
Answer all questions. Each question carries 6 marks.				
No.	Question	M	BL	CO
11.	Give the important postulates of Bohr's atomic theory.	6	1	CO1
12.	A moving body with a mass of 0.1 mg has a wavelength of 3.312×10^{-29} m. Calculate its kinetic energy.	6	5	CO1
13.	Arrange the following elements in the increasing order of their ionization enthalpies, giving proper explanation: B, C, N, O	6	3	CO3
14.	State and explain Markovnikov's rule. Illustrate with an example.	6	2	CO4
15.	What happens when 2-bromobutane is heated with alcoholic KOH? Give the mechanism for the formation of major product.	6	5	CO4
16.	Explain Lucas test to distinguish between 1°, 2° and 3° alcohols.	6	3	CO5
17.	Explain the nucleophilic addition reaction in an aldehyde and ketones with (a) H ₂ O, (b) HCN (c) CH ₃ MgBr	6	5	CO5
18.	Write the synthetic steps for the preparation of methyl orange.	6	3	CO5
Section C		Answer any 1 question. Each carries 10 marks. (1x10=10 marks)		
No.	Question	M	BL	CO
19.	What are the different types of hybridisations involving s, p and d orbitals? Explain the geometry of SF ₆ based on hybridization	10	4	CO2
20.	What are reaction intermediates? Discuss the formation, structure and stability of any two reaction intermediates.	10	2	CO4