

QP CODE: D2BCH2403	(Pages: 2)	Reg. No :
		Name :
SECOND SEMESTER FYUGP EXAMINATION, APRIL 2025		
MINOR COURSE		
CHE2MN108 : Basic Inorganic and Physical Chemistry		
(Credits: 4)		
Time: 2 Hours	Maximum Marks: 70	
Section A		
Answer the following questions. Each carries 3 marks (Ceiling: 24 marks)		
1. Give the thermodynamic expression relating Gibb's free energy and enthalpy.	BL1	CO1
2. Define the term Bronsted acid.	BL1	CO2
3. What are redox indicators? Give any two examples.	BL1	CO3
4. Draw the two important conformations of cyclohexane. Which is more stable?	BL1	CO4
5. Define equivalent mass of an acid. How is the equivalent mass of an acid related to its molecular mass?	BL1	CO3
6. What are endothermic and exothermic processes?	BL2	CO1
7. Explain the buffer action of ammonium acetate.	BL2	CO2
8. How is the hydrolysis constant of a salt of a weak acid and a strong base related to the ionic product of water?	BL2	CO2
9. Describe the role of Brownian motion in maintaining the stability of colloids.	BL3	CO5
10. Identify the dispersed phase and dispersion medium in fog, butter, and smoke in the colloidal system.	BL3	CO5
Section B		
Answer the following questions. Each carries 6 marks (Ceiling: 36 Marks)		
11. What is the entropy change for the conversion of one mole of ice to water at 273 K and 1 atm? (Enthalpy of fusion = 6008 kJmol ⁻¹).	BL3	CO1
(PTO)		

12.	Discuss the optical isomerism of lactic acid. Draw the structures of the different isomers.	BL2	CO4
13.	Explain the enthalpy and entropy conditions that would determine whether a process would be spontaneous or not.	BL1	CO1
14.	Distinguish between the terms molarity, normality and molality.	BL1	CO3
15.	Explain the term common ion effect with suitable examples.	BL1	CO2
16.	Differentiate between geometrical and optical isomerism.	BL1	CO4
17.	Explain how dialysis can be used to remove destabilizing ions from a colloidal system.	BL3	CO5
18.	Explain the physical significance of entropy.	BL2	CO1

Section C

Answer any one question. Each carries 10 marks (1 x 10 = 10 Marks)

19.	Explain the stability of colloids with suitable examples.	BL2	CO5
20.	The percentage carbon in a sugar is measured four times. The values obtained were: 42.01%, 42.28%, 41.79% and 42.25%. Calculate: (i) mean; (ii) median; (iii) average deviation (iv) standard deviation, of the measurements.	BL2	CO3

CO : Course Outcome

BL : Bloom's Taxonomy Levels (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)