

Reg No:.....
Name :.....

K25FY2416 B

Second Semester FYUGP Chemistry Examination
APRIL 2025 (2024 Admission onwards)
KU2DSCHE115 (FOUNDATION IN PHYSICAL,
ORGANIC AND BIOINORGANIC CHEMISTRY)
(DATE OF EXAM: 30-4-2025)

Time : 90 min

Maximum Marks : 50

Part A (Answer any 6 questions. Each carries 2 marks)

1. What is the IUPAC name of a) Formaldehyde b) Acetic acid 2
2. Give an example for an amide. Write its structure and IUPAC name. 2
3. What is heterolysis? Give an example. 2
4. Define the terms enthalpy and entropy. 2
5. What are ionophores? Give 2 examples. 2
6. Name an oxidising agent and reducing agent that can be used in cerimetric analysis. 2
7. What is meant by planar chromatography? Which are the two different types of planar chromatography? 2
8. What is solvent extraction and what are the different types based on the mechanism of extraction? 2

Part B (Answer any 4 questions. Each carries 6 marks)

9. Explain the general characteristics of a homologous series? 6
10. Discuss the resonance concept and the molecular orbital concept of the structure and stability of benzene. 6
11. Using Gibbs -Helmholtz equation, explain the conditions for a process to be spontaneous. 6
12. Describe the working mechanism of the Na -K pump and its importance in maintaining cellular function. 6
13. Explain the following
 - a) Principle of permanganometry
 - b) The equivalent mass of potassium permanganate is 31.6. 6
14. Explain GLC and its principle. What are its merits and demerits. 6

Part C (Answer any 1 question(s). Each carries 14 marks)

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15. (a) Discuss the role of alkali and alkaline earth metal ions in biological systems with suitable examples. 7
- (b) Compare and contrast the roles of hemoglobin, myoglobin, and cytochromes in oxygen transport, storage, and electron transfer. 7
16. (a) Derive expressions for hydrolysis constant and degree of hydrolysis of a salt of a weak acid and a weak base. 7
- (b) Distinguish between heat capacity at constant volume (C_v) and heat capacity at constant pressure (C_p). Derive the relation between C_p and C_v . 7