K26FY1532 Pages: 2 Reg No:.....
Name:.....

Second Semester FYUGP Degree (Reg/Sup/Imp) Examination April 2026

KU2DSCCHE115 - FOUNDATION IN PHYSICAL, ORGANIC AND BIOINORGANIC CHEMISTRY

2024 Admission onwards

Time : 1.5 hours Maximum Marks : 50

Section A

Answer any 6 questions. Each carry 2 marks.

1. What are metalloenzymes?
2. Name any four aluminum compounds used in medicines?
3. What is the common name of methanoic acid? Write its structural formula.
4. Write a homologous series of acid halides
5. Write the molecular formula of a) potassium permanganate b)potassium dichromate c) oxalic acid
6. What is meant by planar chromatography? Which are the two different types of planar chromatography?
7. Distinguish between state function and path function.
8. Write the Henderson's equation of acidic buffer and basic buffer.

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Section B

Answer any 4 questions. Each carry 6 marks.

9. Explain the following
   a) Principle of permanganometry
   b) The equivalent mass of potassium permanganate is 31.6.
10. What is an external indicator? Explain the use of external indicator in dichrometry.
11. Explain the classification of chromatographic techniques based on the types of phases involved.
12. State the first law of thermodynamics and what are its limitations.
13. Illustrate the buffer action of acidic and basic buffers.

14. Calculate the degree of hydrolysis of 0.2M sodium acetate solution in water.(Ka of acetic acid = 1.8x $10^{-}5$ Kw = $1x10^{-}14$ Explain the term amphoteric compounds with suitable examples.

Section C

Answer any 1 questions. Each carry 14 marks.

15. Describe the sodium - pottassium pump

16. (a) Illustrate Huckel³s rule taking examples of a. a monocyclic homocyclic compound b. a polycyclic homocyclic compound c. a heterocyclic compound

    (b) Briefly explain the structure and formation of organic reaction intermediates?

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