

Reg. No.....

Name.....

BA BSC BCOM DEGREE END SEMESTER EXAMINATION - NOVEMBER 2025**UGP (HONS.) SEMESTER - 1: DISCIPLINE SPECIFIC COURSE****COURSE: 24UCHEDSC101: FUNDAMENTALS OF CHEMISTRY - I***(For Regular 2025 Admission & Improvement/ Supplementary 2024 Admission)*

Time: 1.5 Hours

Max. Marks: 50

PART A**One Word Questions***(Answer **all** questions. Each question carries **1** Marks)*

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|---|-----------------------------|
| 1. The value of Gas constant in $\text{J K}^{-1}\text{mol}^{-1}$ is | U,CO1 |
| 2. Anisotropy is exhibited bySolids. | U,CO1 |
| 3. The oxidation state of Mn in KMnO_4 is | U,CO2 |
| 4. What are isotones? | U,CO2 |
| 5. Name a Redox indicator | U,CO3 |
| 6. Give any two examples of Primary standard | R,CO3 |
| 7. The hybridization of carbon atom in benzenes is | U,CO4 |
| 8. Arrange the following carbocation in the increasing order of stability
$\text{CH}_3\text{-CH}_2^+$, $(\text{CH}_3)_3\text{-C}^+$, $(\text{CH}_3)_2\text{-CH}^+$ | U CO4
(1 x 8 = 8) |

PART B**Short Answer Questions***(Answer any **five** questions. Each question carries **3** Marks)*

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|---|--------|
| 9. Define Hydrogen bonding. How can it be classified? | U,CO1 |
| 10. How vapour pressure is related to boiling point of liquid? | U CO1 |
| 11. Give the ideal and real gas equation. Mention the terms involved | U CO1 |
| 12. Calculate the normality of solution containing 6.3 g crystalline oxalic acid in 2 litres of water | A,CO2 |
| 13. Why methyl orange cannot be used for the titration of weak acid against strong base? Explain | A, CO3 |
| 14. You are provided with 2N 500 ml HCl solution. How will you Prepare 0.5 N 1 litre solution | A,CO3 |
| 15. What are electrophiles and Nucleophiles. Illustrate with examples | U,CO4 |

16. Outline the different types of arrows and their significance in depicting the electron displacement in organic reactions U,CO4
(5 x 3 = 15)

PART C**Short Essay Questions**

*(Answer any **two** questions. Each question carries 6 Marks)*

17. Distinguish between crystalline solids and Amorphous solids U,CO1
18. An analyst dissolves 20 g of NaOH in 1litre of water. calculate the Normality, molarity and mole fraction of this solution A,CO2
19. Explain the principle of Complexometric titrations by taking EDTA as Titrant U,CO3
20. Explain the different types of organic reactions with suitable examples U,CO4
(2 x 6 = 12)

PART D**Long Essay Questions**

*(Answer any **one** question. Each question carries 15 Marks)*

21. Discuss the different types of intermolecular forces existing between molecules , U, CO1
22. Explain the structure, formation and stability of free radicals U, CO4
(1 x 15 = 15)