

25900286

Reg.No :

Name :

MAHATMA GANDHI UNIVERSITY, KOTTAYAM
MGU-UGP (HONOURS) Regular EXAMINATION October 2025
Third SEMESTER
Discipline Specific Elective (DSE) - MG3DSECHE200 - BASIC ANALYTICAL
CHEMISTRY
(2024 ADMISSION ONWARDS)

Duration: 2 Hours

Maximum Marks: 70

Remember(K), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create(C), Skill(S), Interest(I) and Appreciation(Ap)

Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.

Part A

Short Answer Type Questions

Answer any **5** questions

Each question carries **4** marks

1. State the observation when silver nitrate is added to a solution containing chloride ion in the presence of nitric acid. [K] / [CO1]
2. What is the difference between eliminating oxalate and fluoride ions in terms of the reagents used? [U] / [CO1]
3. Discuss the importance of evaluation of hazards before starting an experiment. [U] / [CO2]
4. Describe the procedure of titrating oxalic acid solution with standard KMnO_4 . [A] / [CO3]
5. What is gravimetric analysis? [K] / [CO3]
6. How can R_f value be used to identify compounds? [A] / [CO4]
7. Discuss the main instrumental components involved in gas chromatography. [U] / [CO4]

[4x5 = 20]

Part B

Short Essay Type Questions

Answer any **5** questions

Each question carries **7** marks

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|---|-------------|
| 8. Discuss the rules for rounding off numbers, providing examples. | [U] / [CO1] |
| 9. State the major precautions to be taken while weighing chemicals on an electronic balance. | [U] / [CO2] |
| 10. Discuss the problems that can be arised if glassware is not properly cleaned before experiments? | [A] / [CO2] |
| 11. What are the advantages of conductometric titrations compared to other titration methods? | [U] / [CO3] |
| 12. Why is it important to use a filter paper of appropriate pore size during filtration? | [U] / [CO4] |
| 13. List the steps involved in a simple distillation process. | [K] / [CO4] |
| 14. Describe the principle of reverse phase chromatography and how it differs from normal phase chromatography. | [U] / [CO4] |

[7x5 = 35]

Part C

Essay Type Questions

Answer any **1** questions

Each question carries **15** marks

- | | |
|---|-------------|
| 15. Discuss the concepts of mean, variance, and standard deviation, including their mathematical formulas and applications in statistical analysis and data interpretation. | [U] / [CO1] |
| 16. Briefly discuss the basic principle and procedure of (a) Direct titration (b) Indirect titration (c) Back titration (d) Replacement titration | [U] / [CO3] |

[15x1 = 15]