

25901151

Reg.No :

Name :

MAHATMA GANDHI UNIVERSITY, KOTTAYAM
MGU-UGP (HONOURS) REGULAR EXAMINATION March 2026
Fourth SEMESTER

**Discipline Specific Core Course (DSC) - MG4DSCCHE202 - FUNDAMENTALS
OF PHYSICAL CHEMISTRY**
(2024 ADMISSION ONWARDS)

Duration: 1 hour 30 minutes

Maximum Marks: 50

***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

Multiple choice questions

Answer all questions

Each question carries 1 marks

1. In a BCC unit cell, the atom at the body center contributes [U] / [CO1]
a). $1/8$ b). 1
c). $1/2$ d). $1/4$

2. Which among the following is a good adsorbent? [An] / [CO2]
a). Glass b). Charcoal
c). Water d). Rubber

3. Who invented galvanic cell? [K] / [CO4]
a). Michael Faraday b). Luigi Galvani and Alessandro Volta
c). Humphry Davy d). Walther Nernst

4. The forbidden energy gap is maximum in [U] / [CO1]
a). conductors b). semiconductors
c). Insulators d). Superconductors

13. Mention any four applications of conductance measurements. [An] / [CO4]
14. What are temporary magnets? Why is soft iron preferred for making temporary magnets? [U] / [CO1]
15. Discuss the nature of graph obtained in the conductometric titration of strong acid versus weak base by taking suitable examples. [U] / [CO4]
16. Define conductors. Explain the effect of temperature on the conductivity of conductors. [U] / [CO1]

[5x4 = 20]

Part C

Short Essay Questions

Answer any **2** questions

Each question carries **10** marks

17. What are emulsions? Discuss the applications of emulsions in medicine and cleansing action of soap. [A] / [CO2]
18. Write a short note of the following a) Hardy-Schulz rule b) electrical double layer [U] / [CO2]
19. Explain the principle and working of redox electrodes using a platinum electrode. [A] / [CO4]
20. Explain the principle, instrumentation, and working of potentiometric titration. Discuss the role of indicator electrode and reference electrode with suitable examples. [K] / [CO4]

[10x2 = 20]