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# DUMKAL COLLEGE

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(Govt. Aided, Affiliated to the: University of Kalyani Included under section 2(f) & 12 (B) of UGC Act.)

## Notice

15.01.2026

All the Students of Semester I of Department of Chemistry are asked to submit the assignment given below on or before **29/01/2026**. This is mandatory for Semester I Internal Evaluation-2025.

### Major 1

1. Show that for an ideal gas  $P-V$  curve for adiabatic reversible process is steeper than the same for isothermal reversible one
2. Define compressibility factor. How does it vary with pressure for a real gas?
3. Derive an expression for Bohr's radius and total energy for hydrogen atom and hence Calculate the radius of first Bohr orbit of hydrogen atom.
4. What are 'radial functions' and "radial distribution functions" of an orbital? The interatomic distance in chlorine molecule is 1.98 Angstrom. Calculate the Allred-Rochow Electronegativity of chlorine.

### SEC

1. Write a short note on  
A. Antibiotic, B) Anti-viral Drug, C) Antipyretic Drug, D) Anti-Depressant Drug, E) Analgesics
2. What is anaerobic fermentation? What is absolute ethanol? How will you prepare 'rectified spirit'? How will you get absolute ethanol from rectified spirit?

### Minor

1. Write a short note on HSAB principle and its application.
2. Derive an expression for the energy of an electron in the  $n$ th orbit of a hydrogen atom.

### MDC-Chemistry in daily Life

Submit your answer through the link given below:

<https://forms.gle/kmNKUfyumG4BfGSQ7>

  
Head of the Department  
Department of Chemistry  
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