

**Assignment Submission Instructions for First Semester**  
**Students of the Academic Year 2026-27 (July Session)**

1. Following the introduction of semester pattern, it becomes **mandatory for candidates to submit assignment for each course.**
2. Assignment topics for each course will be displayed in the A.U, CDOE website (**[www.audde.in](http://www.audde.in)**).
3. Each assignment contains 5 questions and the candidate should answer all the 5 questions. Candidates should submit assignments for each course separately. (5 Questions x 5 Marks =25 marks).
4. Answer for each assignment question should not exceed 4 pages. Use only A4 sheets and write on one side only. **Write your Enrollment number on the top right corner** of all the pages.
5. Add a template / content page and provide details regarding your Name, Enrollment number, Programme name, Code and Assignment topic. Assignments without template / content page will not be accepted.
6. Assignments should be handwritten only. Typed or printed or photocopied assignments will not be accepted.
7. **Send all First semester assignments in one envelope.** Send your assignments by Registered Post to The Director, Centre for Distance and Online Education, Annamalai University, Annamalai Nagar – 608002.
8. Write in bold letters, “ASSIGNMENTS – FIRST SEMESTER” along with PROGRAMME NAME on the top of the envelope.
9. Assignments received after the **last date with late fee** will not be evaluated.

**Date to Remember**

Last date to submit First semester assignments : 01.11.2026  
Last date with late fee of Rs.300 (three hundred only) : 15.11.2026

**Dr. S.ARULSELVI**  
**Director**

# **CDOE - M.Sc chemistry**

## **Assignments - I<sup>st</sup> semester**

### **Course code :020E1110- S110-(Organic chemistry) - |**

1. Explain aromaticity in hetero annulenes and fullerenes with appropriate structure and justification using huckel's rule
2. Discuss the formation, structure and stability of following intermediates: carbocations, carbanions, carbenes and nitrenes.
3. Give the comparative account of SE1 and SE2 Mechanisms with example. Focusing on kinetics stereochemistry and solvent effects.
4. Explain enantiotopic and diastereotopic hydrogens with examples.
5. Discuss the mechanism of Norrish Type 1 and Norrish Type II photochemical reactions, highlighting their key steps.

### **Course code : 020E1120- S120 (Inorganic chemistry) - |**

1. Explain the theories of  $\alpha$ -decay and  $\beta$ -decay.
2. Explain the similarities between lanthanides and actinides
3. Write and elaborate account of the structure and function of haemoglobin and myoglobin.
4. Discuss the mechanism of nitrogen fixation in biological system. Compare in vivo and invitro nitrogen fixation with suitable examples.
5. Illustrate various preparative techniques of inorganic materials including hydro thermal and zone thermal methods with examples

### **Course code : 020E1130- S130 (physical chemistry) - |**

1. Derive the Gibbs -Duhem equation in the context of thermodynamics and elucidate its significance in determining the relationship between the intensive properties of a system .
2. explain the activity and mean ionic activity coefficients and how do you determine the mean ionic activity by EMF Measurements
3. Derive the expression for rotational and translational partition function and relate them to thermodynamic quantities
4. Examine the theoretical foundation and derivation of stern -volmer equations in thje context of fluorescence quenching
5. Discuss the various methods employed for the synthesis of carbon nanotubes and explain the strategies employed for their functionalisation.

### **Course code : 020E1140- S140 (applied chemistry)**

1. Explain the condensation polymerisation with a suitable example
2. Illustrate how alloying metals to modify their properties can mitigate corrosion, highlighting the underlying principles, suitable examples and industrial applications
3. Describe the classification of water pollutants with two examples from each category.
4. Explain the refining of petroleum, describing the processes involved the separation of fractions and the industrial significance of the products obtained
5. Explain the industrial manufacture of nitrate and phosphate fertilizers describing the raw materials, chemical processes involved and their agricultural significance.