



ANNAMALAI UNIVERSITY

(Accredited with 'A+' Grade by NAAC)

DIRECTORATE OF DISTANCE EDUCATION

Annamalainagar – 608 002

Semester Pattern: 2023-24

Instructions to submit First Semester Assignments

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, DDE website (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, Directorate of Distance 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 : **15.11.2023**

Last date with late fee of Rs.300 (three hundred only) : **30.11.2023**

Dr. T.SRINIVASAN
Director

S020 - M. Sc Chemistry Assignments
(First Semester)

020E1110 Organic Chemistry-I

(5x5=25 Marks)

1. What are heterocyclic compounds? Discuss the aromatic and non-benzenoid compounds in detail manner.
2. Write the formation, structure and stability of carbocations, carbanions, radicals, carbenes and nitrenes.
3. Explain the Electrophilic substitution reaction. Discuss the S_{E1} , S_{E2} and S_{Ei} mechanisms in detail.
4. Discuss the stereo chemistry of biphenyl, allenes and spiranes.
5. Elaborately discuss the principles of photochemistry. Write the photochemical reactions of saturated ketones.

020E1120 - Inorganic chemistry-I

(5x5=25 Marks)

1. Discuss the following (a) Electron capture (b) Internal conversion (c) Nuclear isomerism.
2. Explain the colour and spectra of lanthanides with examples and elaborate the magnetic moments of lanthanide ions.
3. Summarize the structure and biological properties of haemoglobin.
4. Describe the biological functions of metalloenzymes.
5. Discuss the hydrothermal and vapour phase transport methods.

020E1130 - Physical chemistry-I

(5x5=25 Marks)

1. Derive the following equation
 - (i) Maxwell relation
 - (ii) Gibb's-Duhem equation
 - (iii) van't Hoff's reaction isotherm
2. Derive the expression for following statistics
 - (i) Maxwell Boltzmann
 - (ii) Bose-Einstein
 - (iii) Fermi-Dirrac statistics

3. How can you derive translational partition function? And explain its entropy factor (Sackur-Tetrode equation).
4. Discuss the Bronsted-Bjerrum equation and enzyme catalysis.
5. (i) What are the diameter-dependent properties of nanotubes?
(ii) What are unique properties of nanotubes and how would one study those?

020E1140 - Applied chemistry

(5x5=25 Marks)

1. Differentiate synthetic and naturally occurring polymers and discuss various types of polymerization with suitable examples.
2. (i) Define corrosion and explain the types of corrosion.
(ii) Discuss the electroplating and its applications
3. (i) Write elaborately the physical and chemical quantity measurements of water and their importance.
(ii) Write the water pollution laws and list the water standards.
4. (i) What are characteristics of a good quality of coal.
(ii) Give the composition of water gas. How is it prepared in large scale?
5. (i) Explain the manufacture of ammonia in various method?
(ii) Discuss the preparation and properties of urea.
