A N N A M A L A I U N I V E R S I T Y

(Accredited with 'A^{+}' Grade by NAAC)

CENTRE FOR DISTANCE AND ONLINE EDUCATION

Annamalainagar – 608 002

Semester Pattern: 2025-26

Instructions to submit Second 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, CDOE 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 Second 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 – SECOND 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 Second semester assignments : 01.11.2025
Last date with late fee of Rs.300 (three hundred only) : 15.11.2025

DIRECTOR
CDOE

CENTRE FOR DISTANCE AND ONLINE EDUCATION
S019 - M.Sc. PHYSICS
FIRST YEAR – II SEMESTER
ASSIGNMENT QUESTION

019E1210: MICROPROCESSORS AND MICROCONTROLLER

1. Draw and explain the architecture of 8085.
2. Explain the various addressing modes of 8085 microprocessor with example
3. a. Discuss register organisation in 8086
   b. Explain addressing modes of 8086.
4. Write simple programs of 8051 microcontroller.
   i) addition, ii) subtraction, iii) multiplication and iv) division.
5. Elaborate the interface of ADC and DAC

019E1220: QUANTUM MECHANICS - I

1. a. Deduce Schrodinger wave equation and obtain for the wave function for a free particle
   b. State and prove Ehrenfest Theorem.
2. a. Derive the wave function of a particle in a box. Also find the Eigen value and Eigen function using Schrödinger's Equation
   b. Write notes on Pauli Spin matrices.
3. Establish the Schrodinger's equation for a linear harmonic oscillator and discuss its theory in details.
4. a. Distinguish with between schrodinger, Heisenberg & interaction representation &, obtain the equator of motion in each representation.
   b. Define the Clebsch-Gordan coefficient and discuss their symmetry properties.
5. a. Discuss the condition for validity of Born approximation method for spherically symmetric potentials.
   b. Define optical theorem.

019E1230: ELECTROMAGNETIC THEORY

1. a. State Gauss's law and derive Gauss's law in differential form.
   b. Explain Poisson's equation and Laplace's equation..
2. a. State and explain Biot-Savart Law
   b. Discuss divergence and curl of B.
3. a. Deduce Maxwell's equation in free space.
   b. State and explain pointing theorem.
4. a. Discuss scalar and vector potentials.
   b. Analyze Gauge transformation
5. a. Formulate the Fresnel's equations when E is perpendicular to the plane of incidence.