

**Manonmaniam Sundaranar University,
Directorate of Distance & Continuing Education,
Tirunelveli - 627 012 Tamilnadu, India**

**OPEN AND DISTANCE LEARNING (ODL) PROGRAMMES
(FOR THOSE WHO JOINED THE PROGRAMMES FROM THE ACADEMIC YEAR
2023–2024)**

NUCLEAR AND PARTICLE PHYSICS .- SPHM41

1. Explain the role of **spin-orbit coupling** in the shell model. Why is it necessary to explain the observed magic numbers?

OR

1. **b. Describe how the Q-value of a nuclear reaction is calculated and what it represents.**
2. a. Discuss in detail about the Fermi-theory of beta decay and compare the results with experimental observation

OR

- b. Differentiate** between leptons, baryons, and mesons in the classification of elementary particles.

Assignment Questions

Electromagnetic Theory SPHM42

1. a. Starting from the Maxwell's equation obtain the wave equation for the propagation of electromagnetic wave in a symmetric planar wave guide

Or

- b. Using the multiple expansion technique, obtain an expression for electric potential due to a charge distribution at a far away point.

2. a. Deduce the expressions for electric and magnetic fields of an oscillating electric dipole.

Or

- b. Prove that Coulombs gauge is a transverse gauge.

SOLID WASTE MANAGEMENT -SPHS41

Assignment Question No:

1. (a) Define principle of Soldering. Discuss briefly about the types of soldering with neat diagram.

(or)

- (b) Explain construction and working of switch mode power supply.

Assignment Question No:

- 2.(a) Draw the block diagram of CRO and explain the function of each block.

(or)

- (b) Define computer architecture. what do you mean by hardware maintenance? Explain different types of maintenance.