

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai - 600 044.

B.Sc.Mathematics - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - II

20UMAAT2D02 - ALLIED PHYSICS - II

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Define dispersion of light. Explain about angular dispersion.
2. Describe the liquid-drop model of the nucleus.
3. Apply Boolean Algebra, show that $A + \overline{A} \cdot B = A + B$
4. Show that any one De Morgan's theorem.
5. Describe the vector model of the atom.
6. The half-life period of radium is 1590 years. In how many years will one gram of pure element (a) lose one centigram and (b) be reduced to one centigram?
7. Explain the operation of AND gate using diodes.
8. Determine the diameter of a thin wire using air wedge.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Show how two narrow angled prisms can be combined to produce
(a) Dispersion without deviation &
(b) Deviation without dispersion
10. Classify coupling schemes with a neat sketch.
11. Infer the properties of Alpha rays and Gamma rays.
12. Compute the Associative, Distributive and Absorptive laws in Boolean algebra.
13. Judge why is NOR gate called universal building block? Explain.
