

Roll.No.

20UPHCT5010

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.Physics - END SEMESTER EXAMINATIONS - NOVEMBER 2025

SEMESTER - V

20UPHCT5010 - Fundamental of Nanoscience and Nanotechnology

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Brief how the density of states of materials vary at nanoscale.
2. Explain the various types of nanostructures.
3. Describe any two carbon based nano materials.
4. Describe on the thermal evaporation technique for synthesizing nano materials.
5. Write short note on atomic force microscopy and its application in characterizing nano materials.
6. Differentiate between TEM and a light microscope.
7. What is a nanosensor? What are the characteristics of a nanosensor?
8. Describe how nanotechnology is applied in environmental remediation.

Section C

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

9. Elaborate on various properties that change with size in nanosystems.
10. Explain in detail on the top down and bottom up approaches of the synthesis of nanomaterials enumerating the advantages.
11. Discuss in detail on any two non – contact methods of characterizing the nano materials.
12. Elaborate on the various applications of nanomaterials in electronics.
13. Explain in detail on how nanotechnology is applied in the field of medicine.
