

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 - APRIL 2025

SEMESTER - V

22UPHCT5010 - 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. How do the properties of Nano-materials differ from bulk-materials?
2. Explain the principle and working of X-ray diffractometer.
3. Write short notes on gas sensors and biosensors.
4. Discuss the application of nano technology in the medical field.
5. Briefly explain top down and bottom up approaches for producing nano materials.
6. Explain the working of Scanning Electron Microscopy with neat sketch.
7. Write short note on nano electronic devices.
8. Give the role of nano technology in the field of energy applications.

Section C

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

9. Explain the electrical, optical and thermal properties of nano materials.
10. Describe in detail about chemical vapour deposition method.
11. Draw and explain the principle, working and functionality of Transmission Electron Microscopy.
12. Describe the nano sensors based on Graphene with examples.
13. Discuss the recent developments of nano technology in Immunodiagnostics for cancer and central nervous system disorders.
