

**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.**

M.Sc. - END SEMESTER EXAMINATIONS NOVEMBER - 2022

SEMESTER - III

20PPHET3002 - Nano Science and Technology

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section A

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

1. Mention few size dependent properties of nanostructures.
2. What are all the different types of quantum dots and how do you functionalise?
3. Write a note on single electron devices.
4. What are all the phase transition that occur in monolayers?
5. Discuss the applications of carbon nanotubes in different fields.
6. (i) Classify the clean rooms based on its grades.
(ii) Write down the best practices to be followed in clean room
7. Give the theory of X ray diffraction and explain how is it used to study the structure of nano materials.
8. What do you mean by immuno targeted Nanoparticles. Explain.

Section B

Part A

Answer any **TWO** questions ($2 \times 10 = 20$ Marks)

9. Describe in detail about the different bond in materials.
10. Explain the role of quantum confinement of electron in semiconductor nano structure.
11. How do you synthesis the carbon nanotubes? Elaborate it
12. Explain about the different nano particles that are being employed in targeted drug delivery system?

Part B

Compulsory question ($1 \times 10 = 10$ Marks)

13. Define lithography. Describe any two lithography techniques with necessary theory and diagram.

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