



23129777

QP CODE: 23129777

Reg No :

Name :

**UNDER GRADUATE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS,
OCTOBER 2023**

Fifth Semester

(Offered by the Board of Studies in Chemistry)

OPEN COURSE - CH5OPT02 - NANOSCIENCE AND NANOTECHNOLOGY

2017 Admission Onwards

82C80CE3

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is the difference between nanoscience and nanotechnology?
2. What is bottom-up synthesis in nanoscience?
3. What are quantum dots? Give an example.
4. What are the economic issues related to nano technology?
5. What is the relevance of nanoethics?
6. What is an electromagnetic radiation? Explain its components.
7. What is de Broglie relation? Briefly explain.
8. What is UPES? Mention any one use.
9. What are the different electron microscopy techniques used in nanotechnology?
10. What do you mean by nanomedicine?
11. Give any two applications of nano materials in cancer therapy.
12. Give any two uses of smart dusts.

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*





13. What are the unusual properties of fullerenes?
14. What are carbon nanotubes? How they are classified?
15. What are the important regulatory agencies of nanotechnology?
16. Briefly explain the intellectual property policy of nanotechnology.
17. Discuss the interaction between matter and radiation.
18. Explain colour and Constitution.
19. Differentiate between SEM & TEM.
20. How are the nanomaterials characterised using the technique SIMS?
21. Give a brief outline of nanoparticle drug systems for oral administration.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Write an essay on the Feymann's hypothesis and the important milestones in the development of nanotechnology.
23. Explain the energy challenges and environmental impacts of nanotechnology.
24. What is spectroscopy? Describe the use of UV - Visible spectroscopy in the study of nanosystems.
25. Explain the following.
(a) Nanomedicine and its significance (b) Nanosensors (c) Destructive applications of nanotechnology

(2×15=30)

