



QP CODE: 22100049



Reg No : .....

Name : .....

**UNDER GRADUATE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS,  
JANUARY 2022**

**Fifth Semester**

(Offered by the Board of Studies in Chemistry )

**OPEN COURSE - CH5OPT02 - NANOSCIENCE AND NANOTECHNOLOGY**

2017 Admission Onwards

E98E02BE

Time: 3 Hours

Max. Marks : 80

**Part A**

*Answer any **ten** questions.*

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

1. Define Nanotechnology.
2. Why C60 molecules are called bucky balls?
3. Mention two applications of fullerenes.
4. What is a patent?
5. What are the economic issues related to nano technology?
6. What is wavelength?
7. What is matter wave concept of radiation?
8. Explain the term auxochromes.
9. What is SEM? Mention any one use.
10. What are SIMS? Mention any one use.
11. Give any two applications of nano materials in cancer therapy.
12. Which properties of nanomaterials are utilized in designing nanosensors?

(10×2=20)

**Part B**

*Answer any **six** questions.*

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

13. Briefly discuss the bottom-up synthesis of nanomaterials giving examples.





14. Explain the applications of Carbon nanotubes.
15. Explain the role of nanotechnology in energy conservation.
16. Explain the future of nanotechnology.
17. What are the different conditions under which photoelectric emission will take place? Give Einstein's photoelectric equation.
18. How does UPES differ from XPES?
19. Explain TEM as a tool to characterise nanomaterials.
20. Write a note on nanomaterials used in nanobiology.
21. What are the destructive applications of nanotechnology?

(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 national and international nano policies and regulations. Write a note on the regulatory bodies involved.
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 © Destructive applications of nanotechnology

(2×15=30)

