



QP CODE: 22103408



22103408

Reg No :

Name :

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

Fifth Semester

(Offered by the Board of Studies in Chemistry)

OPEN COURSE - CH5OPT02 - NANOSCIENCE AND NANOTECHNOLOGY

2017 Admission Onwards

45833B4F

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Define Nanotechnology.
2. What is bottom-up synthesis in nanoscience?
3. What is the structure of fullerene?
4. Name any two existing laws related to nanotechnology.
5. What is a patent?
6. Write the significance of green nanotechnology.
7. What is Plancks equation?
8. What is electron microscopy?
9. What is TEM. Give any one use.
10. Why are metal nano particles used in synthesis of nanobio assemblies?
11. What is meant by oral, nasal and ocular administration of nano drug delivery?
12. What are nanosensors?

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. Explain Feynman's hypothesis.
14. Discuss any two methods for the synthesis of carbon nanotubes.
15. What are the environmental impacts of nanotechnology?
16. Describe the economical and ethical implications of nanotechnology.
17. Discuss the interaction between matter and radiation.
18. Differentiate between chromophore and auxochrome.
19. Explain the principle and applications of UV- Visible spectroscopy.
20. How are the nanomaterials characterised using the technique SIMS
21. Write a note on therapeutic applications of nanomaterials

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Give a detailed description on different types of nanomaterials giving suitable examples.
23. Write a short note on electromagnetic radiation and explain its components.
24. Describe XPES and XPS methods in the characterization of nanosystems.
25. Explain the following. (a) Nanomedicine and its significance (b) Nanosensors © Destructive applications of nanotechnology.

(2×15=30)

