



QP CODE: 21100049

Reg No :

Name :

UNDERGRADUATE (CBCS) EXAMINATION, FEBRUARY 2021

Fifth Semester

(Offered by the Board of Studies in Chemistry)

Open Course - CH5OPT02 - NANOSCIENCE AND NANOTECHNOLOGY

2017 Admission Onwards

1F0AF8B9

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What is Self assembly in nanoscience?
2. Comment on the statement "there is plenty of rooms at the bottom".
3. Mention different types of nanomaterials.
4. Briefly explain common types of intellectual properties.
5. What is Green nanotechnology?
6. Define electromagnetic radiation?
7. What is photoelectric effect?
8. Give two examples for auxochrome.
9. What is TEM. Give any one use.
10. Why are metal nano particles used in synthesis of nanobio assemblies?
11. Give any two examples for nanomedicines
12. Carbon nanotubes are used in the designing of nanosensors. Why?

(10×2=20)

Part B

*Answer any **six** questions.*

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



13. Why are the properties of materials different at nanoscale?
14. What are carbon nanotubes? How they are classified?
15. What are the duties of regulatory agencies related to nanotechnology?
16. Explain the merits and demerits of nanotechnology on environment.
17. Discuss the interaction between matter and radiation.
18. Explain the use of UV - Visible spectroscopy in the study of nanosystems.
19. Explain use of UPES in the study of nanosystems.
20. What are the different protocols in nanomedicine?
21. What are the destructive applications of nanotechnology?

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Describe the preparation, structure, properties and applications of fullerenes.
23. Write an essay on the future of nanotechnology.
24. Write a note on:
 - (a) Electron microscopy as a tool to characterise nanomaterials.
 - (b) SEM.
25. Write short note on :
 - (a) SPL
 - (b) SIMS with special reference to their use in the studies of nanosystems.

(2×15=30)

