21101598

QP CODE: 21101598

Reg No : .....

Name : .....

UNDER GRADUATE (CBCS) SPECIAL SUPPLEMENTARY EXAMINATIONS, JULY 2021

Fifth Semester

(Offered by the Board of Studies in Chemistry)

OPEN COURSE - CH5OPT02 - NANOSCIENCE AND NANOTECHNOLOGY

2018 Admission Only

9E25AA32

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Give two examples for 3D nanomaterials.
2. What is Feynman's hypothesis?
3. What are quantum dots? Give an example.
4. Name two regulatory agencies related to nanoscience.
5. What is nanoethics?
6. Explain the term Wavenumber.
7. Give two examples for auxochrome.
8. What is the principle of UV-Visbile spectroscopy?
9. Explain the use of TEM in the study of nanosystems.
10. What makes the fusion of nanotechnology and biology possible?
11. What is meant by oral, nasal and ocular administration of nano drug delivery?
12. Give any two applications of nanomaterials in cellular imaging.

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. What are the applications of fullerenes?
14. Explain the structure and properties of different types of carbon nanotubes.
15. Briefly explain the intellectual property policy of nanotechnology.
16. Explain the role of nanomaterials in preserving environment.
17. Explain photoelectric effect.
18. Discuss the interaction between matter and radiation.
19. Brief the technique SEM used for nanomaterial characterisation.
20. Write a short note on nanosensors.
21. What are the destructive applications of nanotechnology?

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain the top-down and bottom-up synthesis of nanomaterials giving suitable examples.
23. Explain the energy challenges and environmental impacts of nanotechnology.
24. Describe XPES and XPES methods in the characterization of nanosystems.
25. Write short note on 1) SPL 2) SIMS with special reference to their use in the studies of nanosystems.

(2×15=30)