B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
III Year V Semester
Core Major - Paper X
BASICS OF NANO SCIENCE

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define nanostructured materials.
2. What are covalent bonds? Give one example.
3. Define nanorods.
4. What are nano skin?
5. Give the principle of single electron transistor.
6. What are nanosensors?
7. Give the principle of AFM.
8. What is lithography?
9. What is meant by nucleation?
10. Define Gibbs free energy
11. What is biological imaging?
12. What is the color of Gold nanoparticles?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Describe any two size dependent properties of nanostructures.
14. Explain about molecular recognition.
15. Describe the construction and working of Bragg's X-ray diffractometer.
16. Discuss the basics of wet chemical synthesis of nanomaterials.
17. Give the principle and working of nano laser.
18. With diagram explain the biological imaging.
19. Describe the principle and procedure of targeted drug delivery.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Discuss the properties and applications of nano polymers.

21. Describe about (i) Quantum dots (ii) Molecular electronics.

22. Describe the principle, construction and working of SEM. Mention its advantages.

23. Explain in detail the top down approach of nanomaterial synthesis with one example.

24. Explain magnetic nanoparticles and their therapeutic applications.

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