B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
III Year V Semester
Basics of Nano Science

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

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

Answer any **TEN** questions

1. What are two dimensional nano materials?
2. Give the different forms of nanostructures.
3. State the principle of Atomic force Microscope.
4. What is Nano-CAD?
5. Define Gibb's free energy.
6. What are the characterisation of crystals?
7. Define Nano skin
8. Why spintronics is important?
9. Name the nano materials used for diagnostic applications.
10. What is biological imaging?
11. Mention the advantage of Scanning Electron Microscope.
12. Define the term molecular recognition.

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

Answer any **FIVE** questions

13. Explain the size dependent property of nanostructures.
14. Describe the working of Scanning Electron Microscope.
15. Explain Chemical Vapour Deposition technique.
16. Discuss Nano MOSFET with its application.
17. Mention the applications of immuno targeted nanoparticles.
18. Explain magnetic nano particle in detail.
19. Discuss the classification of polymers.

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

Answer any **THREE** questions

20. (a) Explain covalent bond between two atoms with suitable diagram.(5)
    (b) Explain Coordinate bond between atoms with suitable diagram (5).
21. Describe the construction and working of Bragg's X-ray diffractormeter.
22. (a) Explain top down and bottom up approach for synthezing nano materials.
    (b) Discuss the defects of crystal.
23. What are quantum dots? How it can be produced?
24. Discuss the applications of Gold nano particle in medical field.

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