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M.Sc. DEGREE EXAMINATION, MARCH/APRIL 2019.

FOURTH SEMESTER

Material Science & Nano Technology

PAPER – III : APPLICATIONS OF NANOMATERIALS AND NANOTECHNOLOGY

Time : Three hours

Maximum : 75 marks

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page.

1. Write the applications of MEMS.
2. What are the materials required for Si based MEMS?
3. Explain the Enabled sensor.
4. Write about on inorganic nanotechnology.
5. What is membrane?
6. Write down an electrochemical process.
7. What is the surface modification?
8. Explain loading of the drug.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. Explain the dry and wet etching processes for micromachining.

Or

10. Briefly discuss about the substrate bonding and surface micromachining.
11. Explain the Gas sensing with nanostructured thin films.

Or

12. Discuss about the nanotechnology enabled optical sensors.

13. Explain the ground water purification by nanomaterials.

Or

14. Write down the nanomaterials membrane principles and fabrication process.

15. Briefly discuss about the nanomaterials preparation via dispersion and solvent evaporation methods.

Or

16. Explain the nanomaterials synthesizing by polymerization and supercritical fluid technology.

