

# CBCS SCHEME

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18NT36

## Third Semester B.E. Degree Examination, Jan./Feb. 2021 Synthesis and Processing of Nanomaterials

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. With the neat sketch write about Ball milling synthesis of nanoparticles. Add a note on Inert. (10 Marks)
- b. Write a note on Laser pyrolysis method and Ion sputtering method. (10 Marks)

OR

- 2 a. Discuss about PVD with a neat sketch. (10 Marks)
- b. Explain MBE with a neat sketch. (10 Marks)

### Module-2

- 3 a. Describe about precipitation methods in detail with sketch. (10 Marks)
- b. Explain about Hydrothermal and Solvothermal synthesis of nanoparticles. (10 Marks)

OR

- 4 a. Write a note on photochemical and electrochemical synthesis of nanomaterials. (10 Marks)
- b. Give a note on sol-gel method with a neat sketch. (10 Marks)

### Module-3

- 5 a. With the neat sketch explain spray pyrolysis and flame spray pyrolysis. (10 Marks)
- b. Explain about control of nanowires size in detail. (10 Marks)

OR

- 6 a. Write a note on fundamental aspects of VLS and SLS processes. (10 Marks)
- b. Explain about gas condensation process and gas phase synthesis. (10 Marks)

### Module-4

- 7 a. Explain about biosynthesis of nanoparticles. (10 Marks)
- b. Discuss about synthesis of nanoparticles using proteins and DNA templates. (10 Marks)

OR

- 8 a. Describe the role of plants in nanoparticle synthesis. (10 Marks)
- b. Give a note on viruses as components for the formation of nanostructured materials. (10 Marks)

### Module-5

- 9 a. With a neat sketch explain about surface modification of inorganic nanoparticles. (10 Marks)
- b. Explain about biodegradable PLGA nanosphere. (10 Marks)

OR

- 10 a. Give a note on development of new cosmetics based on nanoparticles. (10 Marks)
- b. Discussed about development of photocatalyst inserted into surface of porous aluminosilicate. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.