

CBCS SCHEME

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15NT52

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019

Synthesis of Nanomaterials

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Write a note on potential uses of metal oxide nanoparticles. (08 Marks)
- b. Describe synthesis of semiconductor nanoparticles CdS and TiO₂ nanostructures. Mention their applications. (08 Marks)

OR

- 2 a. Briefly explain the applications of semiconductor nanoparticles. (08 Marks)
- b. Explain the procedure involved in the synthesis of CdO and AgO nanoparticles. (08 Marks)

Module-2

- 3 a. List the methods we can use for the synthesis of ZnS nanostructures? Add a note on advantages, disadvantages and applications of ZnS nanostructures? (10 Marks)
- b. Clarify how toxicity of CdSe quantum dot can be reduced? Explain with an example. (06 Marks)

OR

- 4 a. Explain the synthesis AgS nanostructures. Add a note on advantages and drawbacks of AgS nanostructures. (06 Marks)
- b. Define Quantum dots. Add a note on advantages, disadvantages and applications of quantum dots in Bio-imaging with an example. (10 Marks)

Module-3

- 5 a. Describe the magnetosomes. Write a note on the synthesis of magnetosomes by biological method. (06 Marks)
- b. Explain potential uses of oxide and non-oxides nanoparticles. (10 Marks)

OR

- 6 a. Design the synthesis of magnetite nanoparticles. (08 Marks)
- b. Write a short note on oxides and non-oxide nanoparticles with an example for each. (08 Marks)

Module-4

- 7 a. Write a note on synthesis of Zirconium and Titanium phosphates. (08 Marks)
- b. Describe the synthesis of Aluminium phosphates and Iron phosphates. (08 Marks)

OR

- 8 a. Explain the synthesis of phosphates of Gallium and Indium. (08 Marks)
- b. Define Nanoporous materials. Add a note on advantages, disadvantages and applications of nanoporous materials. (08 Marks)

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.

Module-5

- 9 a. Describe the steps involved in green synthesis of nanoparticles. List few applications. (10 Marks)
- b. Write a note on advantages, disadvantages and applications of the biological methods involved in the synthesis of nanoparticles. (06 Marks)

OR

- 10 a. Explain the role of Tobacco Mosaic Virus as the components for the formation of nanostructured materials. Mention their applications. (06 Marks)
- b. Describe the steps involved in the synthesis of nanoparticles by making use of Bacteria. Mention their applications. (10 Marks)
