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Third Semester B.E. Degree Examination, Dec.2019/Jan.2020 Synthesis and Processing of Nanomaterials

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Write a brief of note on ball milling synthesis of Nanoparticles. (10 Marks)
b. Discuss in detail about Inert gas condensation method for synthesis of nanoparticles. (10 Marks)

OR

- 2 a. Explain Langmuir – Blodgett method. (10 Marks)
b. Discuss about the arc discharge method of synthesis nanoparticles. (10 Marks)

Module-2

- 3 a. Describe about chemical reduction and photochemical synthesis method of nanomaterials. (10 Marks)
b. Explain hydrothermal synthesis and solution combustion synthesis of nanoparticles. (10 Marks)

OR

- 4 a. Write a note on : i) Electrochemical synthesis ii) Sonochemical synthesis. (10 Marks)
b. Explain Sol-gel method of synthesis of nanomaterials. (10 Marks)

Module-3

- 5 a. Explain Spray Pyrolysis and flame spray pyrolysis method of synthesis of nanoparticles. (10 Marks)
b. Explain the gas condensation process. (10 Marks)

OR

- 6 a. Describe VIS method. (10 Marks)
b. Explain Chemical vapour condensation process. (06 Marks)
c. Explain SLS method in brief. (04 Marks)

Module-4

- 7 a. Explain the synthesis of nanoparticles using fungi. (10 Marks)
b. Write a note on magnetotactic bacteria for synthesis of nanoparticles. (10 Marks)

OR

- 8 a. Discuss about the procedure of synthesis of nanoparticles by bacteria. (10 Marks)
b. Explain microbial synthesis of nanoparticles. (10 Marks)

Module-5

- 9 a. Brief about surface modification of inorganic nanoparticles by organic functional groups. (10 Marks)
b. Explain the process of developing photocatalyst inserted into surface of porous alumino silicate. (10 Marks)

OR

- 10 a. Explain the fabrication technique of organic nanocrystals. (10 Marks)
b. Explain Instantaneous nano foaming method for fabrication of closed porosity Silica particle. (10 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.