CBCS SCHEME

USN | | | | | | | | | | **18NT36**

Third Semester B.E. Degree Examination, Aug./Sept.2020
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. Discuss about the arc discharge method of synthesis of nanoparticles. **(10 Marks)**
b. Explain in detail about chemical vapour deposition. **(10 Marks)**

OR

2 a. Write a note on:
i) Electrochemical synthesis
ii) Sonochemical synthesis. **(10 Marks)**
b. Elucidate Langmuir-Blodget method in detail. **(10 Marks)**

Module-2

3 a. Write a note on:
i) Chemical precipitation method
ii) Co-precipitation method
iii) Arrested precipitation method. **(10 Marks)**
b. Discuss how micro emulsions used for synthesis of nanoparticles. **(10 Marks)**

OR

4 a. Discuss Solgel method of synthesis of nanomaterial in detail. **(10 Marks)**
b. Explain hydrothermal synthesis and solution combustion synthesis of nanoparticles. **(10 Marks)**

Module-3

5 a. Describe VLS method in detail with neat schematic. **(10 Marks)**
b. Write a note on:
i) Spray pyrolysis
ii) Flame spray pyrolysis. **(10 Marks)**

OR

6 a. Explain the gas condensation process. **(10 Marks)**
b. Write a note on:
i) Chemical vapour condensation
ii) SLS method. **(10 Marks)**

Module-4

7 a. Discuss about the role of plants in nanoparticle synthesis. **(10 Marks)**
b. Write a note on synthesis of nanoparticles using proteins and DNA templates. **(10 Marks)**

OR

8 a. Explain the synthesis of nanoparticles using fungi. **(10 Marks)**

b. Discuss about the procedure of synthesis of nanoparticles by antinomycetes. **(10 Marks)**

Module-5

9 a. Explain the fabrication technique of organic nanocrystals. **(10 Marks)**

b. Explain about nanoparticles in emulsion and functional nanocoating for the application in cosmetics. **(10 Marks)**

OR

10 a. Elucidate about surface modification of inorganic nanoparticles by organic functional groups. **(10 Marks)**

b. Explain Instantaneous nanofoaming method for fabrication of closed porosity silica particle. **(10 Marks)**

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