CBCS SCHEME

USN | | | | | | | | | | |

15NT52

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018
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. Define metal oxide and semiconductor nanoparticles. Explain the procedure involved in the synthesis of Cdo and Ago nano particles. **(10 Marks)**

b. Write a note on CuO nanoparticles. Provide its advantages and disadvantages. **(06 Marks)**

OR

2 a. Explain the different methods of synthesis of ZnO nanoparticles. Give the applications of ZnO nano particles. **(10 Marks)**

b. Write a note on potential uses of metal oxide nano particles. **(06 Marks)**

Module-2

3 a. Define Quantum Dots. Give the advantages, disadvantages and applications of Quantum dots in Bio-imaging with example. **(10 Marks)**

b. How toxicity of CdSe Quantum dot can be reduced? Explain with example. **(06 Marks)**

OR

4 a. Explain the synthesis of Fe and Pt nano particles by Chemical method. **(08 Marks)**

b. Write a note on the applications of Ag and Au nanoparticles. **(08 Marks)**

Module-3

5 a. Write a note on oxide and non-oxide nanoparticles with an example. **(08 Marks)**

b. Explain the synthesis of magnetic nanoparticles. **(08 Marks)**

OR

6 a. Describe the steps involved in the synthesis of $CoFe_2O_4$, $MnFe_2O_4$ and $CoCrFeO_4$ nanoparticles. **(10 Marks)**

b. What are magnetosomes? Write a note on the synthesis of magnetosomes by biological method. **(06 Marks)**

Module-4

7 a. Define Nanoporous materials. Give its advantages, disadvantages and applications. **(08 Marks)**

b. Describe the synthesis of Aluminium phosphates and Iron phosphates. **(08 Marks)**

OR

8 a. Explain the synthesis of Copper and Nickel phosphates. **(08 Marks)**

b. Explain the potential uses of nanoporous materials. **(08 Marks)**

Module-5

9 a. Write a note on advantages, disadvantages and applications of the biological methods involved in the synthesis of nanoparticles. **(06 Marks)**

b. Describe the steps involved in green synthesis of nanoparticles. **(10 Marks)**

OR

10 a. Explain the role of Tobacco Mosaic virus as the components for the formation of nanostructured materials. Mention its applications. **(08 Marks)**

b. Write a short note on magnetotactic bacteria for natural synthesis of magnetic nanoparticles. Mention its applications. **(08 Marks)**

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