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**Question Paper Code: 51003**

Ph.D COURSE WORK EXAMINATION, MAY 2018

Elective

Technology

15PPH103 - SYNTHESIS AND APPLICATIONS OF NANOMATERIALS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Briefly explain core shell and Hybrid nanocomposites. CO1- U (20)  
Or  
(b) What is meant by mechanical alloying? Explain ball milling technique and characterization of nanomaterials. CO1- U (20)
2. (a) What do you mean by nanofabrication? Explain the methods involved in the formation of self assembled monolayers. CO2- U (20)  
Or  
(b) Explain the Biomimetic approaches of design of functional, self assembled systems? CO2- U (20)
3. (a) What is Nanolithography? Explain the various nanolithography techniques. CO3-U (20)  
Or  
(b) Write in detail about the sputtering techniques of synthesis of nanomaterials. CO3-Ana (20)

4. (a) Explain various applications of nanoporous materials. CO4- U (20)

Or

(b) What are nano porous materials? Explain the synthesis of silicon and Zeolites. CO4- U (20)

5. (a) Explain the working principle of single electron transistor with neat diagram. CO5-U (20)

Or

(b) Discuss various biological applications Quantum devices. CO5-Ana (20)

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