Reg. No. : | | | | | | | | | | |

Question Paper Code: 53964

Ph.D COURSE WORK EXAMINATION, DECEMBER 2015

Elective

Technology

15PCY103 - SYNTHESIS OF NANO MATERIALS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) (i) Discuss the size dependent properties of nanomaterials. (10)

(ii) Write an explanatory notes on Quantum wells and Nano wires. (10)

Or

(b) (i) With suitable example explain the conductivity and enhanced catalytic activities of nano materials in macroscopic state. (14)

(ii) Write a short note on nano cluster. (6)

2. (a) (i) Describe the synthesis of Chemical precipitation and Sol-gel synthesis. (12)

(ii) Discuss briefly the synthesis of nano materials by using photochemical method with suitable example. (8)

Or

(b) (i) With a neat sketch, discuss briefly the synthesis of nano materials by using (1) Sonochemical and (2) Solvothermal methods. (12)

(ii) With a neat diagram discuss the electrochemical synthesis of nano materials. (8)

3. (a) Give a brief account on (i) Semiconductors islands and (ii) Pillared clays. (20)

Or

(b) (i) What is meant by biometrics? Explain briefly with suitable example. (10)

(ii) Write an explanatory note on Nature of catalysis in the process of self assembly. (10)

4. (a) (i) Describe the chemical vapour deposition process for the fabrication of nano materials. (10)

(ii) What is meant by Ion sputtering? How is it employed in the fabrication of nano materials? (10)

Or

(b) (i) Explain briefly the synthesis of nano materials by plasma arc technique. (8)

(ii) Briefly explain 1) Laser ablation and 2) Electro deposition methods. (12)

5. (a) What is nano composite? With suitable examples explain different types of nano composites in detail. (20)

Or

(b) Discuss briefly the role of Curcumin loaded nanoparticles in Drug Delivery System (DDS). (20)

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