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

Question Paper Code: 52001

Ph.D. COURSE WORK EXAMINATION, MAY 2017

Elective

Technology

15PPH102 - PHYSICS AND CHEMISTRY OF SOLIDS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) Define quantum size effect. Explain the phase transition processes takes place in solids. (20)

Or

(b) Explain the chemical physics of atomic and molecular clusters**.** (20)

2. (a) Define surface energy. Explain the relation between the chemical potential as a function of surface curvature. (20)

Or

(b) Describe about the Van der Waals attraction potential. (20)

3. (a) Write a note on: (i) Nano scale Heat Transfer and (ii) Catalysis by Gold Nano particles. (10+10)

Or

(b) Describe briefly about the (i) Nano deposition of soft materials and (ii) Nano catalysis. (10+10)

4. (a) Explain zero dimensional, one-dimensional and two dimensional nanostructures. (20)

Or

(b) Describe the properties of nano wires, nano clusters and nano structured beam. (20)

5. (a) Describe about the preparation and characterization method of growth controlled by diffusion. (20)

Or

(b) Explain in detail about the synthesis of nano materials by template based method. (20)

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