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

Question Paper Code: 52204

Ph.D COURSE WORK EXAMINATION, NOV 2016

15PPH101 - PHYSICAL CHEMISTRY

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

(PART A - 5x20=100)

1. (a) Explain in detail about first and second laws of thermodynamics. (20)

Or

(b) Elaborate briefly about the reaction of solid state phase and phase rule. (20)

2. (a) Derive an expression for the Gibb's tree energy with Gibb's paradox. (20)

Or

(b) Derive an expression for Femi-Dirac and Bose-Einstein statistics and its applications. (20)

3. (a) Discuss about the theory of solution. (20)

Or

(b) Derive an expression for thermodynamic equilibrium. (20)

4. (a) (i) Explain in detail about mechanisms of diffusion. (10)

(ii) How do parent atom diffuse in the system. (10)

Or

(b) Discuss in detail about various experimental method of investigation of diffusion. (20)

5. (a) Describe about the homogeneous and heterogeneous nucleation. (20)

Or

(b) (i) Explain in detail order-disorder transformations. (10)

(ii) Discuss about Martensitic transformation with examples. (10)