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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T1 EXAMINATION - September 2018

Ph.D - I Semester

COURSE CODE: 13P1WPH113

MAX. MARKS: 15

COURSE NAME: Advanced Materials Science

COURSE CREDITS: 03

MAX. TIME: One Hour

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*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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- Q1. What is the reason for the existence of energy gap in a material? Obtain a relation to correlate the formation of energy gap in a material. [6-marks]
- Q2. Elaborately compare cubic and hexagonal close packed crystal systems. [3-marks]
- Q3. What are dislocations? Are they advantageous or disadvantageous in materials science. Explain your answer. [2-marks]
- Q4. What is Gibbs free energy? Discuss its significance. [2-marks]
- Q5. Write short notes on (a) Enthalpy of reactions (b) Thermodynamic equilibrium [2-marks]