

**FACULTY OF ENGINEERING**

**B.E. II – Semester (CBCS) (Backlog) Examination, May / June 2019**

**Subject: Engineering Physics – II**

**Time: 3 Hours**

**Max.Marks: 70**

**Note: Answer all questions form Part-A and any five questions from Part-B**

**PART – A (10x2 = 20 Marks)**

- 1 Define Space Lattice and Unit Cell.
- 2 Classify the conductors, semiconductors and insulators based on Band theory.
- 3 Explain the concept of magnetic domain.
- 4 Write applications of superconductors
- 5 Explain the concept of hole formation.
- 6 Give various of types of polarizations in dielectric medium.
- 7 Define fluorescence phenomenon.
- 8 Distinguish between bulk, thin films and nanomaterials.
- 9 Explain the concept of quantum confinement.
- 10 Give various methods in bottom – up process of nanomaterials.

**PART – B (5x10 = 50 Marks)**

- 11 Estimate the equilibrium concentration of Schottky defects.
- 12 Give the concept of Band formation. Explain the Kroning – Penney Model of Band formation quantitatively.
- 13 Explain the Weiss molecular field theory of ferromagnetism.
- 14 Explain the Hall effect. Deduce the expression for Hall Coefficient.
- 15 Explain various types of thermal evaporation methods for thin film formation.
- 16 Why nanomaterials are significant? Discuss the synthesis of nanomaterials by Sol-Gel process.
- 17 Define type-I and type-II superconductors. Explain the BCS theory of superconductors qualitatively.

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