

**FACULTY OF ENGINEERING**

**B.E. II – Semester (CBCS) (Backlog) Examination, November 2020**

**Subject: Engineering Physics – II**

**Time: 2 Hours**

**Max.Marks: 70**

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

**PART – A (5x2 = 10 Marks)**

- 1 Explain the significance of Miller Indices.
- 2 Define Fermi energy.
- 3 State the properties of Ferrites.
- 4 Explain Meissner effect.
- 5 How P-type and N-type materials are prepared?
- 6 Write applications of ferroelectrics.
- 7 State the principle of Scanning Electron Microscope.
- 8 Write applications of thin films.
- 9 What is meant by zero dimension nanomaterial?
- 10 Write applications of nanomaterials.

**PART – B (4x15 = 60 Marks)**

- 11 Deduce the Bragg's law. Discuss the experimental determination of lattice constant by powder diffraction method.
- 12 Define magnetic domain. Explain the hysteresis curve of magnetic materials.
- 13 Explain the formation of PN-junction diode. Discuss the I-V characteristics of diode.
- 14 Describe the construction and working principle of scanning electron microscope.
- 15 Give account of classification of nonomaterials. Discuss the preparation of nano-materials by Chemical Vapour Deposition (CVD) method.
- 16 Estimate the equilibrium concentration of Frenkel defects.
- 17 Discuss the frequency dependence of dielectric constant and dielectric loss of a dielectric medium.

\*\*\*\*