Code: PH1501 **GEC-R14**

I B. Tech II Semester Supplementary Examinations, December 2015

ENGINEERING PHYSICS

(Common to Electronics and Communication Engineering, Computer Science and Engineering and Information Technology)

Time: 3 Hours **Max. Marks: 60**

Note: All Questions from **PART-A** are to be answered at one place.
Answer any **FOUR** questions from **Part-B.** All Questions carry equal Marks.

PART-A

6 × 2 = 12M

1. What is Fraunhofer Diffraction?
2. Distinguish between Spontaneous and Stimulated emissions?
3. What are Miller indices?
4. What is meant by Dielectric constant?
5. What is Hall Effect?
6. What are matter waves?

PART- B

4 × 12 = 48 M

1. a) Explain formation of Newton's rings under reflected light and determine the wavelength of a monochromatic light using Newton's Rings. (8M)
   b) Explain the Double refraction phenomena with neat diagram. (4M)
2. a) With neat diagram, explain construction and working of a CO_2 Laser. (8M)
   b) Explain the types of optical fibers with neat diagrams? (4M)
3. a) What are Bravais lattices? Define Unit cell and Primitive cell. (6M)
   b) How do you determine the Miller indices? What is Bragg's law? (6M)
4. a) What are Type I and Type II superconductors? Write the applications of Superconductors. (9M)
   b) Write a note on Origin of magnetic moment. (3M)
5. a) Derive the carrier concentration in Intrinsic semiconductors. (10M)
   b) What are indirect band gap semiconductors? (2M)
6. a) Derive Schrodinger's Time Dependent wave equation? (6M)
   b) What are the postulates of Quantum free electron theory? What is Fermi energy? (6M)

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