AM/CS/CYS/DS 112 (R-22)

Total No. of Questions : 10] [Total No.of Pages : 02

I/IV B. Tech. DEGREE EXAMINATIONS, AUGUST - 2023

First Semester

AM / CS / CYS / DS

ENGINEERING PHYSICS

Time : **Three Hours** Maximum : **70** Marks

Answer All Questions

Answer ONE question from each Unit. 5x14=70 M

UNIT - I

1. a) Explain about Grating spectrum and its characteristics ?

   b) Explain the difference between prism spectra and grating spectra ?

(OR)

2. a) Explain the conditions for sustained interference by reflected light.

   b) In a Newton's experiment the diameter of the 15^{th} ring was found to be 0.59 cm and that of the 5^{th} ring is 0.336 cm. If the radius of curvature of the lens is 100 cm. Find the wavelength.

UNIT - II

3. Explain about various modes of propagation of EMW through optical fiber in detail.

(OR)

4. a) Explain about Ga As laser with its application ?

   b) What is an acceptance angle ? Derive.

UNIT - III

5. Explain about classification of Magnetic materials in detail ? Give the applications.

(OR)

6. Explain the following with examples (i) Dielectric polarizability (ii) Dielectric strength (iii) Dielectric constant.

P.T.O.

UNIT - IV

7. What is the doping ? Explain how n type semiconductor obtained and derive Fermi-level of it.

(OR)

8. Derive the carrier concentration in n-type semiconductor with help of energy band diagram ? Give the differences between intrinsic and extrinsic semiconductors.

UNIT - V

9. a) Explain the de-Broglie's dual nature of matter waves ?

   b) Write short notes on Meissner effect for superconductor ?

(OR)

10. a) Explain about BCS theory of superconductivity ?

    b) Give the application of superconductor ?