

May 2015

Bachelor of Computer Application (BCA) Examination
II Semester

Physics-II

Time : 3 Hours]

[Max. Marks : 40

Note: Attempt all the five questions. Solve any two parts from each question. All questions carry equal marks.

1. (a) What do you mean by guided and unguided waves ? How reflection coefficient can be defined and what do you mean by VSWR ? Explain.
- (b) Write down the basic concepts of electromagnetic wave propagation. Establish relationship between critical frequency and MUF.
- (c) What do you mean by ionospheric propagation ? Explain and also explain the drirk propagation.
2. (a) What is meant by Interference ? Discuss the principle of superposition of light waves.
- (b) Explain the Young's double slit experiment and also explain the theory of interference fringes.
- (c) How interference occur in thin films ? Explain how Newton's rings are formed and how - one can determine the wavelength with the help of Newton's Rings ?
3. (a) What do you understand by diffraction of light waves ? Explain z one plate. How it can be compared with convex lens ?
- (b) Explain diffraction due to single slit with neat and suitable diagram.
- (c) What do you mean by dispersive power ? Obtain an expression for dispersive power of the Grating.
4. (a) What is meant by polarisation of light waves ? What double refraction can be explained with Huygen's Theory ?
- (b) How optical activity can be defined ? Explain Fresnel's theory of optical rotation.
- (c) What do you mean by Quarter and Half Wave Plate ? Explain Nicol's Prism.
5. (a) Distinguish between stimulated and spontaneous emission.
- (b) Write down the full form of LASER. What do you mean by spatial and temporal coherence?
- (c) Explain Ruby LASER and Gas Laser.

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