1 year B.S.C (Semester ||) → WAVE OPTICS

M O S T I M P QUESTIONS

UNIT – 1 (INTERFERENCE)

Long Questions

1. Describe with theory Newton's Experiment to determine the wave length of a monochromatic light?
2. Explain the constructions and working of Michelson interferometer diagram ?

Shot Questions

1. What are the conditions for interference of light?
2. Explain the formation of interference by the parallel shape a film in reflection? (Cosines law)
3. Explain Lloyd's single mirror method?

UNIT – 2 (DIFFRACTION)

Long Questions

1. Define diffraction explain the diffraction due to single slit with the necessary theory?
2. Explain the construction and working of zone plate derive equation for its focal length.

Shot Questions

3. Distinguish between Fresnel diffraction and fraunholfer diffraction?
4. Compare the zone plate with convex lens?
5. Explain resolving power of grating?

UNIT- 3 (POLARIZATION)

Long Questions

1. Define double refraction describe the construction and working of Nicol Prism and its applications?

2. What is optical activity explain its experimental determination using optical polari meter?

Shot Questions

1. Explain about Brewster's law?
2. write about half wave and quarter wave plate?
3. Explain production of circular and elliptical polarised light?

UNIT- 4 (Aberration and Fibre Optics)

Long Questions

1. Define chromatic aberration derive the conditions for achromatism when two lenses are a) in contact b)separated by a finite distance.
2. What is spherical aberration explain methods to minimize the spherical aberration?

Shot Questions

1. Briefly explain Coma, and its minimising methods?
2. Explain about astigmation?
3. What are the applications of fibre optics?
4. Explain the classification of optical fibres?(Types of optical fibres)

UNIT- 5 (Lasers and Holography)

Long Questions

1. Describe the construction and working of Ruby Laser? What are its drawbacks?
2. What are the applications of lasers? Describes the constructions and working of helium neon laser?

Shot Questions

1. Explain population inversion and metastable states? (laser principle)
2. What are Einstein coefficients deduce the relation between them
3. Explain basic principle of holography and its applications?