

S.R. FATEPURIA COLLEGE

INTERNAL ASSESSMENT

PHYSICS (HONOURS)

2ND SEMESTER

PAPER - PHY-H-CC-T-04

FULL MARKS: 10

(1) Answer any FOUR from the following questions: (4X1=4)

- (a) Write down the Linearity and Superposition principle of wave.**
- (b) What do you mean by Electromagnetic nature of light?**
- (c) Explain Huygens' idea about propagation of Wavefront? Write down the properties of wavefront.**
- (d) What do you mean by interference of light? What are the conditions for interference Pattern to be available?**
- (e) Describe Weber-Fechner Law. What do you mean by Bel and Phon?**
- (f) Explain Temporal and Spatial Coherence.**

(2) Answer any TWO from the following questions: (2X3=6)

- (a) Discuss the formation of Lissajous figure by the superposition of two SHM when the periods are in the ratio of 1:2, and the amplitudes and phases are different. (With full derivation)**
- (b) Prove the Law of refraction using Huygens' Principle and explain the total internal reflection.**
- (c) If a film of thickness 't' and refractive index 'm' is introduced in the path of one of the sources in young's double slit experiment, then derive the expression of the fringe shift.**
- (d) Explain how the Newton's rings are produced. Why the central spot of the rings is dark in nature? Why the rings are circular in nature?**
- (e) What do you mean by particle velocity and wave velocity? Derive the relation between them.**
- (f) Explain the formation of 'Beats' with derivation.**