

# PH-101

## B. Tech. (Semester I) Examination – 2011 (Physics (Engg.))

*Time: Three Hour*  
*Maximum Marks: 50*

**Note: Attempt question from all the sections.**

### Section- A

#### (Short Answer Type Questions)

**Note: Attempt any ten questions. Each question carries two marks.**  
**(2x10=20)**

1. What do you understand by time dilation?
2. Discuss the formation of Newton's ring by reflected light.
3. Explain Rayleigh criteria of resolution.
4. Define optical activity.
5. Discuss various types of optical fibres.

6. Discuss two important applications of Geography. \*
7. Deduce the expression for the variation of mass with velocity.
8. The rest mass of proton is  $2.67 \times 10^{-27}$  Kg. At what speed will its mass be double to its rest mass?
9. Explain the term LASER.
10. What is meant by diffraction of light?
11. A particle of rest mass  $m_0$  moves with velocity  $c/\sqrt{3}$ . Calculate its mass and momentum.
12. Describe the Gallilian transformation equations.
13. What are the negative results of Michelson Morley Explain?
14. Define the spontaneous and stimulated emission of radiation.

15. Explain the theory of production of circularly and elliptically polarized light.

### Section- B

#### (Long Answer Type Questions)

**Note:** Attempt any two questions. Each question carries fifteen marks. (15x2=30)

- ✓ 1. Deduce the relativistic velocity addition theorem show that it is unsistent with Einstein's second postulate of special theory of relativity.
2. Explain the phenomenon of diffraction due to single slit.
3. What are Einstein's coefficients? Derive Einstein's relation.
- ✓ 4. Discuss the formation of interference fringes due to wedge shaped thin film.