Roll No. .....

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B. Sc. (Pass Course) 4th Semester Examination – May, 2019

PHYSICS (OPTICS - II)

Papers : Phy-402

Time : Three hours] *[Maximum Marks : 45*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt at least ***one*** question from each Unit. A student has to attempt ***five*** questions in all.

UNIT – I

1. With the help of a suitable diagram discuss the conditions of formation of dark and bright rings in terms of diameters of the ring in Newton's ring experiment. 9

2. Explain the term Fresnel's Half Period Zone in relation to plane wave and derive an expression for resultant amplitude at a point P due to these zones. 9

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3. With the help of neat sketch, describe Michelson interferometer and hence deduce the condition of maxima and minima. Mention few applications of it. 9

UNIT – II

4. Discuss in detail the N-slit diffraction pattern and derive the condition for maxima and minima for such systems. 9

5. Write short notes on :
   (a) Dispersive and resolving power of an optical instrument 6
   (b) Rayleigh Criterion 3

UNIT – III

6. What is Double refraction ? Discuss the construction and working of Nicol prism.

7. Discuss the following :
   (a) Quarter-wave and Half-wave Plate
   (b) Polarization due to scattering

8. What is optical activity ? Discuss in detail the construction and working of half shade polarimeter.