This question paper contains **2** printed pages]

GA—51—2023

FACULTY OF SCIENCE

B.Sc. (Fourth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/New Course)

PHYSICS

Paper VIII

(Optics and Lasers)

(Saturday, 29-4-2023) **Time : 2.00 p.m. to 4.00 p.m.**

Time— Two Hours *Maximum Marks*—40

N.B. :—*All* questions are compulsory.

1. Describe the Huygen's eyepieces with neat lebelled diagram and explain its cardinal points. 15

Or

(*a*) Describe the Michelson's interferometer with neat labelled diagram. 8

(*b*) Describe the Fraunhofer Diffraction at single slit and calculate the width of central maxima. 7

2. Describe the double refraction with neat labelled diagram (Huygen's explanation). 15

Or

(*a*) Describe the He-Ne laser with neat labelled diagram. 8

(*b*) Describe the Spontanious and Stimulated Emission. 7

P.T.O.

3. Write short notes on (any *two*) : 10

(*a*) Cardinal points of an optical system

(*b*) Newton's Rings

(*c*) Quater wave plate

(*d*) Population Inversion.