

This question paper contains 2 printed pages]

NA—38—2023

FACULTY OF SCIENCE

B.Sc. (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(CBCS/New Pattern)

PHYSICS

Paper-VIII

(Optics and Laser)

(Saturday, 9-12-2023)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :- (i) *All questions are compulsory*

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|-----|--|----|
| 1. | Explain Ramsden Eyepiece and their cardinal points | 15 |
| | <i>Or</i> | |
| (a) | Explain Fraunhofer's diffraction due to single slit. | 8 |
| (b) | Describe in detail Michelson interferometer | 7 |
| 2. | State and explain Brewster's law and explain Huygen's explanation of double refraction in uniaxial crystals. | 15 |
| | <i>Or</i> | |
| (a) | Explain the following terms in detail : | 8 |
| | (i) Spontaneous emission | |
| | (ii) Stimulated emission. | |
| (b) | Explain with diagram He-Ne laser. | 7 |

P.T.O.

WT

(2)

NA—38—2023

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

10

- (a) Huygen's eyepiece
- (b) Rayleigh criterion
- (c) Nicol prism
- (d) Population Inversion.

NA—38—2023

2