D (Printed Pages 4)

(21223) Roll No.

B.Sc.(Com.Sci.)-I Sem.

NP-3574

B.Sc. (Computer Science)

Examination, Dec.-2023

Applied Physics

(BCS-103)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from **all** sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each question carries **3** marks. Very short answer is required not exceeding 75 words. 3×5=15

P.T.O.

1. What are coherent sources.
2. Define polarization.
3. Write any three applications of Laser.
4. What is diffraction.
5. Explain frame of reference.

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following three questions. Each question carries **7½** marks. Short answer is required not exceeding 200 words. 7½×2=15

6. Define Phenomenon of double refraction.
7. Find the relation between Einstein's coefficients.
8. Define time dilation and derive the formula for it.

Section-C

(Detailed Answer Questions)

Note : Answer any **three** questions out of the following **five** questions. Each question carries **15** marks. Answer is required in detail. 15×3=45

9. Write basics postulates of special theory of relativity and obtain Lorentz transformation equations from these postulates.

10. Describe the construction and working of He-Ne gas laser with the energy level diagram.

11. What are Newton's rings. How are they formed, show that in reflected light diameter of bright rings is proportional to square root of odd number.

12. State and prove superposition theorem.

13. Show that when a condensor is discharged through an inductance, the discharge is oscillatory. What will be the time period and frequency.