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(20321) Roll ..

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

NP-3574

B.Sc. (Computer Science)

Examination, Dec.-2020

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

1. What are coherent sources.
2. Define inertial and non-inertial frames.

3. Write any four properties of Laser.
4. What do you mean by diffraction.
5. Name different types of moving coil and moving iron instruments.

Section - B

(Short Answer Questions)

Note : Answer 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. What are the difference between spontaneous and stimulated emission.
7. Define time dilation, and derive the formula for time dilation.

8. Explain the meaning of reactive power and power factor in ac (steady state) circuits.

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. What are Newton's rings how are they formed? Prove that in reflected light diameters of bright rings are proportional to the square root of odd natural numbers.

10. Define specific rotation. Describe the construction and working of Laurent's half shade polarimeter.

11. Write basic postulates of special theory of relativity. and deduce the Lorentz transformations from the postulates.

12. State and prove Maximum power transfer theorem.

13. Describe the construction and working of ruby laser (three level laser) with necessary diagrams.