A
(21119)

Roll No. .....

Total Questions : 13] [Printed Pages : 3

NP–3574

B.Sc. (Computer Science) Ist Semester Examination, Nov., 2019

APPLIED PHYSICS

(BCS-103)

Time : 3 Hrs.] *[M.M. : 75*

Note :– Attempt questions from all Sections as per instructions.

Section–A

(Very Short Answer Type Questions) 3×5=15

Note :– Attempt all the *five* questions. Each question carries 3 marks. Very Short Answer is required not exceeding **75** words.

1. Write any *four* conditions to obtained well defined interference.
2. Define specific rotation.
3. What are the postulates of special theory of relativity ?
4. Write the expressions for average value and rms value of a half wave rectified sinusoidal voltage.
5. State Norton's theorem.

Section–B

(Short Answer Type Questions) 7½×2=15

Note :– **Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short Answer is required not exceeding 200 words.**

6. Explain the phenomenon of double refraction in calcite or quartz.
7. Define length contraction and derive the formula for it.
8. Explain the concept of a phasor. How is it different from a vector ?

Section–C

(Long Answer Type Questions) 15×3=45

Note :– Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is fequired in detail.

9. Describe the construction of a Nicol's prism. Explain how it can be used as a polarizer and as an analyzer.

10. With necessary theory and energy level diagram explain the working of a Helium-Neon gas laser.

11. Describe the Michelson-Morley experiment and discuss its negative result.

12. State and prove the Thevenin's theorem.

13. What is meant by the resolving power of an optical instrument ? Explain Rayleigh's criterion for just resolution.