A–891

Total Pages : 3 **Roll No. .....**

PHY–554

M.Sc. PHYSICS (MSCPHY)

(Microwave Devices and Communication System)

2nd Year Examination, 2024 (June)

Time : 2:00 Hrs. Max. Marks : 70

Note* :–** This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

Long Answer Type Questions 2×19=38

***Note* :–** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. Explain about balanced modulator to generate DSB – SC Signal.

2. Determining the Scattering Matrix of a multi-port device would seem to be particularly laborious. Is there any way to simplify the process ?

3. Explain the construction and working of magnetion in detail.

4. What do you understand by antenna ? Explain working of microwave antenna.

5. Explain radars. Discuss various types of radars. What do you understand by tracking radar ?

Section–B

Short Answer Type Questions 4×8=32

***Note* :–** Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. What do you understand by TE and TM mode ? Explain in brief.

2. What are phase shifters in a microwave ? How does phase shifting work ?

3. What are the microwave devices ? Discuss the principle of microwave semiconductor devices.

4. Explain working of Two Cavity Klystron.

5. What are parametric devices in the microwave ? Why they are used in microwave ?

6. What are active and passive microwave devices ? Explain in detail.

7. Discuss in detail about travelling wave tube.

8. Discuss various types of modulation.

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