A–1193

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

PHY-553

M.Sc. Physics (MSCPHY)

Memory Devices and Microprocessors

Examination February, 2026

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 logic families in detail. Discuss the performance characteristics of logic families such as speed, power dissipation, noise margin, and fan-out.
2. Describe the classification of semiconductor memories. Explain the characteristics of RAM and ROM and compare them with suitable examples.
3. Explain the architecture and internal organization of Intel 8085 microprocessor with the help of a neat block diagram.
4. Discuss the addressing modes of Intel 8085 microprocessor. Explain any four addressing modes with suitable examples.
5. Explain the architecture of Intel 8086 microprocessor. Compare Intel 8085 and Intel 8086 microprocessors.

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. Write a short note on Emitter Coupled Logic (ECL).
2. Explain memory organization and memory expansion.
3. Describe the pin configuration of Intel 8086 microprocessor.

4. Explain the timing diagram of Intel 8085 for memory read operation.

5. What is the 8259 ? Why is a priority interrupt controller required ?

6. Explain I/O interfacing and data transfer schemes.

7. Write a short note on 8255 Programmable Peripheral Interface.

8. Explain the Pentium microprocessor and mention its important features.

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