A–1189

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

MPHY-606

M.Sc. Physics (MSCPHY)

Memory Devices and 8085 Microprocessor

Examination February, 2026

Time : 2:00 Hrs. Max. Marks : 35

Note* :–** This paper is of Thirty Five (35) 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) (2×9½=19)

***Note* :–** Section 'A' contains Five (05) Long-answer type questions of Nine and Half (9½) marks each. Learners are required to answer any *two* (02) questions only.

1. Describe the main components of the 8085 microprocessor, including the ALU, control unit, registers, and buses.

2. Explain the operation of a Tri-state logic gate. How does it differ from standard logic gates in terms of functionality and applications ?

3. With neat PIN diagram explain the various signals of INTELL 8085 microprocessor.

4. Write an assembly language program to add and subtract two 8 bit numbers. 8 bit addition.

5. Write short notes on any *two* of the following :

   (a) SID and SOD pins

   (b) SIM and RIM instructions

   (c) CALL and JMP instruction

   (d) DMA (Direct Memory Access)

Section–B

(Short Answer Type Questions) (4×4=16)

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

1. Explain INTELL 8085 microprocessor with the help of functional block diagram.
2. Describe the main components of the 8085 microprocessor, including the ALU, control unit, registers, and buses.
3. Write a program to sort the numbers in descending order.
4. Discuss the general-purpose registers and their uses in the 8085 microprocessor.
5. Explain the concepts of the Instruction Cycle, Machine Cycle, and T-State in the context of the 8085 microprocessor.
6. Illustrate the timing diagrams of the following 8085 μP instruction and explain them in detail,
   (a) MOV A, M
   (b) MVIB, 25 H
7. Explain the roles of RAM and ROM in the 8085 microprocessor system. Compare their characteristics.
8. Explain the role of memory in the 8085 microprocessor system and discuss its function.

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