

**K-426**

Total Pages : 3

Roll No. ....

**MPHY-606**

**Memory Devices and 8085 Microprocessor**

M.Sc. Physics (MSCPHY)

4th Semester Examination, 2023 (Dec.)

**Time : 2 Hours]**

**[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)**

**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.

(2×9½=19)

1. Describe the important performance characteristics of logic families. Explain PMOS and NMOS. Also draw the circuit of PMOS and NMOS NOR gate.
2. Explain the Intel 8355 ROM with the help of a suitable block diagram, also draw and discuss the pin diagram of Intel 8355 ROM.
3. Discuss about instruction cycle, machine cycle and T state. Explain the instruction cycle for STA instruction.
4. Explain the instruction set of 8085 microprocessors with suitable examples.
5. Write short notes on any *two* of the following :
  - (a) Tri state logic.
  - (b) Read only memory (ROM).
  - (c) Functional block diagram of 8085 microprocessor.
  - (d) Addressing modes of 8085 microprocessor.

**SECTION-B**  
**(Short Answer Type Questions)**

**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. (4×4=16)

1. Explain why CMOS logic family is best suited in designing sophisticated digital systems.

2. Compare Transistor- Transistor logic (TTL) with other logic families.
  3. Draw the suitable diagram to show the memory interfacing to CPU. What are different control lines (Buses) in microprocessors?
  4. Explain random access memory (RAM) and their types.
  5. Explain the purpose of different flags and their working in an INTEL 8085 microprocessor.
  6. Write a note on timing and control unit of INTEL 8085 microprocessor.
  7. Differentiate between machine language, assembly language and high-level language.
  8. Write down the addressing modes of the following instruction.
    - (a) ACI 20H.
    - (b) CMA.
    - (c) STA 2500H.
    - (d) MOVE, L.
    - (e) XCHG.
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