

S-500

Total Pages : 3

Roll No.

MSCPH-522

Memory Devices and Microprocessors

M.Sc. Physics (MSCPH)

3rd Semester Examination, 2022 (Dec.)

Time : 2 Hours]

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.

SECTION-A

(Long Answer Type Questions)

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.

(2×19=38)

1. Give an overview of 8085 instruction set. Explain instruction classifications according to their size and work with proper examples.

2. Discuss computer memory and its classification. Draw a block diagram of 4-bit memory register using D-flip flop.
3. What is microprocessor? Discuss the logical structure of a typical microprocessor.
4. Define an ideal microcomputer. What is the difference between an ideal microcomputer and an actual microcomputer?
5. Explain assembly Language programming. Discuss 16-bit arithmetic instruction and arithmetic operation.

SECTION-B
(Short Answer Type Questions)

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. (4×8=32)

1. What are different methods of interconnection of computer units? Explain.
2. Explain the term single address instruction, two address instruction and three address instructions in brief.
3. Why the lower byte address bus (A0–A7) and data bus (D0–D7) are multiplexed? Explain the role of ALE signal.

4. Explain with the help of timing diagram the fetch and execution cycle of OUT instruction.
 5. What is a RAM? Explain linear selection and coincident selection in a RAM.
 6. Discuss the interrupt driven mode of data transfer.
 7. Explain the distinguishing features between memory mapped I/O scheme and I/O mapped I/O scheme.
 8. Draw and discuss the architecture of 8086. Mention the jobs performed by BIU and EU.
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