

Roll No.

MSCPHY-12 (M.Sc. PHYSICS)
Second Year Examination-2014
PHY 553

Memory Devices and Microprocessors

Time Allowed : Three Hours

Maximum Marks : 60

Note : This paper is of sixty (60) marks divided into three (03) sections. Learners are required to attempt the questions contained in these sections according to the detailed instructions given therein.

Section - A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long-answer-type questions of fifteen (15) marks each. Learners are required to answer any two (02) questions only. (2×15=30)

1.
 - (a) Discuss the memory classification in computers.
 - (b) Explain cache memory, real memory and virtual memory.

2. Discuss the addressing modes of Intel 8085 Microprocessor and Intel 8086 microprocessor.
3. Explain the organisation and architecture of Intel 8085 microprocessor.
4. Discuss various logic families. Explain their relative advantages and disadvantages.

Section - B

(Short Answer Type Questions)

**Note : Section 'B' contains eight (08) short-answer-type questions of five (05) marks each. Learners are required to answer any four (04) questions only.
(4×5=20)**

1. What is assembly language. Give its advantages and disadvantages.
2. Draw the complete PIN diagram of Intel 8086 microprocessor.
3. Which characteristics of pentium Processor account for its better performance than its predecessors.
4. Differentiate between emitter coupled logic and tri-state logic
5. Explain timing diagram. Discuss timing diagram for opcode fetch operation.
6. Discuss the functioning of priority Interrupt controller 8259.
7. Describe various data transfer schemes for microprocessors.
8. Discuss the attributes of Intel 80386.

Section - C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective-type questions of one (01) mark each. All the questions of this section are compulsory. (10×1=10)

1. Identify a 16 bit microprocessor among these.
 - (a) Intel 8086
 - (b) Intel 8085
 - (c) Celeron
 - (d) Motorola 6809
2. Which of these is not an interfacing device :
 - (a) Buffer
 - (b) Decoder
 - (c) Encoder
 - (d) Adder
3. Peripherals can be interfaced with the 8085 Micro Processing unit in how many ways ?
 - (a) Peripheral I/O
 - (b) Memory Mapped I/O
 - (c) Both (a) & (b)
 - (d) None of these
4. This memory is non-volatile and information written on this memory is permanent.
 - (a) RAM
 - (b) ROM
 - (c) R/W Memory
 - (d) CACHE
5. A word which describes a combination of letters to suggest the operation of an instruction is :
 - (a) Interpret
 - (b) Mnemonic
 - (c) Compile
 - (d) Execute

6. Nibble corresponds to a group of :
- (a) 4 bits (b) 8 bits
(c) 16 bits (d) 32 bits
7. Which of the following does not find an application in IC technology.
- (a) P MOS (b) C MOS
(c) D MOS (d) N MOS
8. By MOV instruction in 8086 which of the following data transfer is not possible.
- (a) Register to register (b) Register to memory
(c) Memory to register (d) Memory to memory
9. High IO/\overline{M} status signal indicates :
- (a) An I/O operation
(b) Memory operation
(c) Reading external device
(d) Writing into an external device.
10. Which is not a functional category of 8085 microprocessor instruction set.
- (a) Data transfer operation (b) Distributing operation
(c) Arithmetic operation (d) Branching operation