

PHY-553**Memory Devices and Microprocessors**

M. Sc. Physics (MSCPHY-12/13/16/17)

Second Year, Examination, 2018

Time : 3 Hours**Max. Marks : 80**

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. 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 nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. (a) Classify the types of microprocessor instructions according to the word size.
(b) Make a block diagram of 8085 bus organization and explain different buses.
2. (a) What is Computer Memory ? Describe classification of computer memory.
(b) Discuss the programing model of 8086 μp .

3. (a) Explain emitter coupled logic (ECL), with proper examples.
(b) Describe logic families. Explain how transfer can be used as a switch.
4. (a) Make an interfacing diagram of keyboard and a seven segment LED with the help of a 8255 A and discuss its working.
(b) Make timing diagram of MVI A 32 H instruction in 8085 microprocessor.

Section–B

(Short Answer Type Questions)

Note : Section ‘B’ contains eight (08) short answer type questions of eight (8) marks each. Learners are required to answer *four* (04) questions only.

1. Make a timing diagram of memory read and memory write instruction of 8085 microprocessor.
2. Discuss CMOS logic family. How can we produce NAND and NOR logics using CMOS ?
3. Discuss the characteristics of memory devices.
4. Explain briefly RISC and CISC processors.
5. Discuss 8086 μp with demultiplexed address bus and generating control signals in minimum mode.
6. Describe the features of intel pentium processors.
7. What is the difference between high level language and low level language. Give some examples of each.

8. Compare different logic families and discuss about best logic family.

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.

Choose the correct answer :

1. RAM used in computer is :
 - (a) Static
 - (b) Dynamic
 - (c) None of these
 - (d) Static and dynamic both
2. 8085 μ p Operations are classified into :
 - (a) 5 groups
 - (b) 3 groups
 - (c) 2 groups
 - (d) 4 groups
3. 8086 μ p is a/an :
 - (a) 16 bit μ p
 - (b) 8 bit μ p
 - (c) 4 bit μ p
 - (d) 32 bit μ p

4. Which of the following takes least power ?
 - (a) TTL
 - (b) ECL
 - (c) CMOS
 - (d) LSI
5. MOV is an instruction :
 - (a) 2 bytes
 - (b) 1 byte
 - (c) 3 bytes
 - (d) All above
6. Intel Pentium Processor has data bus of :
 - (a) 16 bit
 - (b) 32 bit
 - (c) 128 bit
 - (d) 64 bit
7. 8085 μp has interrupt inputs :
 - (a) 5
 - (b) 6
 - (c) 7
 - (d) 8
8. A dynamic RAM consists of :
 - (a) 2 transistors
 - (b) 2 transistors 1 capacitor
 - (c) 1 transistor and 1 capacitor
 - (d) None of the above

9. 8 to 3 encoder has :

- (a) 8 input 3 output
- (b) 3 input 8 output
- (c) 8 control 3 output
- (d) Both (a) and (b)

10. What is the memory word size in 8086 μ p ?

- (a) 1 byte
- (b) 2 bytes
- (c) 3 bytes
- (d) 4 bytes

