Roll No. ....

MSCPHY-12 (M.Sc. PHYSICS)
Second Year Examination-2015

PHY-553

Memory Devices and Microprocessors

Time : 3 Hours   **Maximum Marks :** 60

Note : This paper is of sixty (60) marks divided into 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 fifteen (15) marks each. Learners are required to answer any two (02) questions only.   (2×15=30)

1. (a) Make a block diagram of 8085 Bus organization and explain the diagram.   (5)

    (b) Write an assembly language program for the multiplication of O8H and O2H.   (5)

    (c) Make a schematric 8086 microprocessor architecture of logical signals.   (5)

2. (a) What is computer memory. Describe primary and secondary memory.   (7½)

(b) What is microprocessor ? Explain the organization of a microprocessor based system. (7½)

3. (a) Make a block diagram of 8259 A interrupt controller and discuss its function. (7½)

(b) What is a logical circuit ? Explain tri state devices with proper examples. (7½)

4. (a) Draw a block diagram of 8255 and describe its function. (7½)

(b) Make 8085 Timing diagram for execution of 'OUT' instruction. (7½)

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. Describe the architecture of 80386 microprocessor.

2. How microprocessor differentiates between data and instruction.

3. What is absolute and partial decoding ?

4. Classify the 8085 instruction set.

5. Write short notes on ROM & RAM.

6. Explain the following assembly language programme.

    MVI A, 32H

    MVI B, 48H

    ADD B

    OUT 01H

    HLT

7. What is computer language ? Describe high level language and low level language.

8. What is Intel Pentium processor explain the RISC and CISC processors.

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. How many bytes make a word of 32 bits ?

    (a) 1   (b) 4

    (c) 2   (d) 3

2. 8085 microprocessor is a

    (a) 4 byte up   (b) 8 byte up

    (c) 4 bit up   (d) 8 bit up

3. Hexadecimal equivalent of 10101108_2 is

    (a) ACH   (b) ABH

    (c) CAH   (d) BAH

4. Assembly language is a

    (a) High level language (b) High and low both

    (c) Low level language   (d) None of the above

5. LDA 2050H is an instruction

    (a) 1-byte   (b) 2-byte

    (c) 3-byte   (d) 4-byte

6. Address bus in 8085 micro processor is

    (a)   Unidirectional   (b)   Bi-directional

    (c)   Tridirectional   (d)   Above all

7. 8255A is a programmable

    (a)   Parallel I/O device   (b)   Serial I/O device

    (c)   both a and b   (d)   None of the above

8. 8086 microprocessor is a

    (a)   8 bit up   (b)   16 bit up

    (c)   8 byte up   (d)   4 byte up

9. 1K memory means -

    (a)   1000 bits   (b)   1024 bytes

    (c)   1000 bytes   (d)   1024 bits

10. Third stage of tri state logic device is

    (a)   0   (b)   High impedance

    (c)   1   (d)   Low impedance