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Roll No. -----

PHY-553

Memory Devices and Microprocessors

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

Second Year, Examination 2021 (Winter)

Time: 2 Hours

Max. Marks: 80

Note : This paper is of Eighty (80) 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 Twenty (20) marks each. Learners are required to answer any two (02) questions only.

[2 x 20 = 40]

Q.1. Discuss different types of Logic family and their characteristics in detail. Why CMOS is best suited in designing sophisticated digital systems?

P.T.O.

- Q.2. (a) Give the schematic diagrams of microcomputer and explain its different parts.
- (b) Discuss the functional block diagrams and pin diagram of the 8085 microprocessor.
- Q.3. (a) Discuss the pin diagram of Intel 8259 PIC.
- (b) Explain architecture of Intel 8086 microprocessor.
- Q.4. What do you understand by machine language and assembly language? Write an assembly language program for 8 bit decimal subtraction.
- Q.5. Write short notes on any two-
- (a) Pentium processor
- (b) Memory architecture of a computer system
- (c) Addressing mode of 8086 microprocessor.

Section – B

(Short-answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Ten (10) marks each. Learners are required to answer any Four (04) questions only.

[4 x 10 = 40]

- Q.1. What is RAM? Mention the different types of RAM and their characteristics.
- Q.2. Explain the term Fan in, Fan out, Propagation delay and Noise margins of logic circuit. Explain the effect of noise on the input voltage of a gate.
- Q.3. Explain what are the signals used for demultiplexing of address and data bus.
- Q.4. Write short notes on any two:
- (a) Instruction and data format of 8085 microprocessor.
 - (b) Timing diagrams
 - (c) Pipeline concept
- Q.5. Discuss different addressing modes of 8085 microprocessor with examples.
- Q.6. Discuss the classification of Intel 8085 instruction set with examples.

P.T.O.

Q.7. Draw and explain the timing diagram of Fetch operation.

Q.8. Explain the mode 0 operation of PPI 8255.
