

Roll No.

Total Pages : 2

752306

December 2023

M.Sc. (Physics) – III SEMESTER

Microprocessor (MPE-304)

Time : 3 Hours]

[Maximum Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) Why the data bus is bidirectional? (1.5)
- (b) What is the physical memory space in 8085? (1.5)
- (c) Define opcode and operand. (1.5)
- (d) Write the list of volatile and nonvolatile semiconductor memories. (1.5)
- (e) Calculate the physical address (PA) of 4320:892F. (1.5)
- (f) What are assembler, interpreter and compiler? (1.5)
- (g) Write the full form of EPROM. (1.5)

752306/50/111/239

87 [P. T. O.]

- (h) List the segment registers of 8086. (1.5)
- (i) What is the total memory capacity of 8086 microprocessor? (1.5)
- (j) Which bytes (higher/lower) are connecting to odd address bank in 8086? (1.5)

PART-B

2. (a) Explain with example how to exchange the value in temporary registers? (10)
- (b) Write a short note on SP. (5)
3. (a) Sketch the opcode fetching timing diagram for 8085. (5)
- (b) Write in details how to program execute in 8085. (10)
4. Design the interfacing of two 4KB EPROM and two 4KB RAM chips with 8086 microprocessor. (15)
5. (a) Write the general format of 8086 instructions. (5)
- (b) Sketch the internal diagram of 8255. (10)
6. (a) Explain the functions of handshake signals. (10)
- (b) What is HOLD and HLDA? How is it used? (5)
7. Sketch and explain 8237DMA controller. (15)