

Total Marks: 80

(3 Hours)

Note: 1. Question No. 1 is compulsory.

2. Solve any three from the remaining five questions.

3. All questions carry equal marks.

1. a. Explain the register set of the 8086. (05)
- b. Write a brief note on the dedicated interrupts of the 8086. (05)
- c. Explain the clock and reset circuits of the 8086 system. (05)
- d. Explain the usage of the following instructions: i. AAA (05)
ii. LEA SI, label
2. a. Explain the bus arbitration techniques used in loosely coupled systems. Also, highlight advantages and disadvantages of each. (10)
- b. Write an assembly language program for the 8086 to convert a Hexadecimal number to its ASCII equivalent. (10)
3. a. Design and explain the following system comprising of: (10)
 - 8086 working at 8 MHz
 - 16 KB of EPROM using 8KB devices
 - 16 KB of RAM using 8 KB devices
 - 1 input port (8 Bit)
 Show the Memory, I/O map and relevant address decoding.
- b. Explain Memory Segmentation in the 8086. State its advantages. (10)
4. a. Explain the cascaded mode of operation of the 8259 PIC. Clearly explain the sequence of operation. (10)
- b. Explain the 8086-8087 interface with a neat diagram. Describe the role of the 8288 Bus controller in this system. (10)
5. a. Explain with the help of neat timing diagrams Mode 1 operation in the 8255 PPI. (10)

Assume Port A as input port and Port B as output port.
- b. Interface a 4*4 matrix keypad to the 8086 . Also, write an algorithm to scan the keypad. (10)

(Assembly language program not expected)

6. Write short notes on (any two):

(20)

- a. 8237 DMA controller
- b. 8085 Architecture
- c. String instructions of the 8086

muquestionpapers.com