3 Hours   Marks:80

N.B. 1) Question number 1 is compulsory

2) Attempt any three from remaining five questions.

3) Assume suitable data whenever necessary

4) Figure to the right indicates full marks

Q.1   Answer the following questions:

a) Explain the concept of Pipelining in 8086. State the importance of Queue register.   4M

b) WAP to add two 8 bit BCD numbers stored at location 1000H:2000H   4M

c) Explain the significance of following pins: TEST,LOCK   4M

d) What is meant by Multiprocessor systems? Explain the advantages & disadvantages

   of Multiprocessor system.   4M

e) Explain the control flags: Direction flag, Trap flag, Interrupt flag.   4M

Q.2.a) Explain in detail Minimum mode of operation of 8086 processor.   10M
       Also draw Read and Write timing diagrams.

b) WAP to transfer the Block of data (10 bytes) from memory location   10M

   0000:C100H to 0000:C200H.

Q.3 a) Explain the block diagram of 8259 Programmable Interrupt Controller in detail.

      What are different operating modes of 8259 PIC.   10M

   b) Design 8086 based system for the following specifications: 10M

      i) 8086 operating at 8MHz

      ii) 4KB ROM and 8KB RAM

      Explain the design and show memory address map

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Q.4.a) Draw and explain in detail interfacing of 8086 main processor with 8087 Math   10M
    Coprocessor.

  b) Explain following 8086 instructions using suitable examples   10M

    i) XLAT   ii) LOOPNE   iii) DAA iv)DIV src v) CMPSB

Q.5.a) Interface 8 LEDs with 8255 in Mode 0 and write programs to display   10M

    i) ON/OFF LEDs display   ii) Running LEDs display

  b) Explain different Bus Arbitration techniques in loosely coupled systems.   10M

    Also highlight advantages & disadvantages of each.

Q.6 Write Short notes on the following (Any 3):   20M

  a) Modes of operation for 8255 PPI

  b) Interrupt structure of 8086 microprocessor

  c) Need of 8237 DMA and its interfacing with 8086

  d)Programming model of 8086

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