Printed Pages—3   EEC—406

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0109   Roll No. | | | | | | | | | | | |

B.Tech.

(SEM IV) EVEN SEMESTER THEORY EXAMINATION, 2009-2010

INTRODUCTION TO MICROPROCESSORS

Time : 3 Hours   Total Marks : 100

Note :   *Attempt ALL questions.*

1.   Attempt **any four** parts of the following :   (4x5=20)

   (a)   Discuss about evolution of Microprocessor.

   (b)   Explain the term INTERRUPT of a μp.

   (c)   What do you mean by addressing modes of a MICROPROCESSOR.

   (d)   Explain the requirement of peripheral devices with a microprocessor.

   (e)   Discuss about application of microprocessor.

   (f)   Explain operation of any microprocessor based system.

2.   Attempt **any four** of the following :   (4x5=20)

   (a)   Draw and explain internal architecture of 8085.

   (b)   Explain operation of 8085 with the help of timing diagram.

(c)   Explain addressing modes of 8085.

(d)   Explain interrupt structure of 8085.

(e)   Explain the execution of following instructions.

  (i)   MV1 A, 08H

  (ii)   JMP 2000H

  (iii)   JC 2000H

  (iv)   LXI B, 1234H

(f)   Explain the significance of Flag Register of 8085.

3.   Attempt **any two** parts of the following :   (2x10=20)

(a)   Explain memory organization of 8086.

(b)   Draw and explain internal architecture of 8086.

(c)   Explain addressing modes of 8086 with suitable example and also explain physical address calculation for each mode.

4.   Attempt **any two** parts of the following :   (2x10=20)

(a)   Write an assembly language program based on 8085 for addition of 16 - bit hexadecimal number (whose lower byte is stored in 2000 H and higher byte in 2001H) with another 16 - bit hexadecimal number (whose lower byte is stored in 2002H and higher byte in 2003H) and store the result in memory location 2004H and 2005H and carry in 2006H.

(b) Write an assembly language program based on 8085. Multiply the two numbers stored in memory locations 2000H and 2001H respectively and place the result in memory location 2002H.

(c) Write an assembly language program based on 8086 to arrange 10, 8 bit number (stored in memory) in ascending order.

5. Attempt **any four** of the following : (4x5=20)

(a) Explain internal architecture of 8255 (Programmable peripheral interface).

(b) Explain DMA process with the help of internal architecture of 8237 (Programmable DMA controller).

(c) Explain operation of programmable interrupt controller 8259 with the help of diagram of internal architecture.

(d) Draw and explain internal Block diagram of 8255 and its different modes of operation.

(e) Interface an 8255 with 8086 to work as an I/O port. Initialize port A as output port, port B as input port and port C as output port. Port A address should be 0740H. Write a program to reverse switch position SW_0 - SW_7. connected at port B. The reversed pattern is to displayed on port A, to which 8 LED's are connected, while the port C lower displays number of on switches out of total eight switches.

(f) Draw and explain internal Block diagram of programmable timer counter and it's mode of operation.

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