Registration No. : | | | | | | | | | | |

*Total number of printed pages – 2*

B. Tech

PCEC 4301

# Fifth Semester Regular Examination – 2014

## MICROPROCESSORS

**BRANCH(S) : AEIE, BIOMED, EC, ETC, IEE**

**QUESTION CODE : H 131**

**Full Marks – 70**

**Time : 3 Hours**



*Answer Question No. **1** which is compulsory and any **five** from the rest.*

*The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2 ×10

   (a) What is the Maximum memory size that can be addressed by 8086 microprocessor ?

   (b) Give a comparison between 8086 and 8088 ?

   (c) How the physical address generated in 8086 ?

   (d) What are the operating modes in which 8086 operate ?

   (e) Which register pair in 8085 processor is used as memory pointer ?

   (f) What are the interrupt vector addressing of the following interrupts in 8086 INTO and INT 10H ?

   (g) What is Masking ? Why it is needed ?

   (h) How many ports are present in 8255 PPI ? Mention the truth table for port selection taking A0 and A1 as inputs ?

   (i) What are the control flags of 8086, explain ?

   (j) What is Wait state ? If an 8086 processor running at 10 MHz performs read cycles with two wait states, What is the duration of bus cycle ?

2. (a) Explain Mode1 and BSR mode of operation of 8255 PPI using examples ? 5

   (b) Find the control word for mode 2 operation 8255 where port A is acting as bidirectional, with mode 2, port B as output and mode of port B as mode 1 ? 5

P.T.O.

3. (a) Draw and explain the read cycle of 8086 in minimum mode ? 5

(b) Discuss the various addressing modes of 8086 ? 5

4. Interface four 16K × 8 memory chips and three 32k × 8 memory chip using 8086 ? 10

5. (a) Draw the block diagram of 8251 USART and explain the receiver and transmitter section of it ? 7

(b) Explain the de-multiplexing in 8085 ? 3

6. (a) Write an assembly language program using 8086 microprocessor to move, a byte string 16 bytes long from the offset 0200H to 0300H in the segment 5000H ? 5

(b) Explain the BIU of 8086 microprocessor and explain instruction queue and pipelining ? 5

7. (a) Explain the predefined interrupt of 8086 ? 5

(b) Explain the memory segmentation and its advantages ? 5

8. Write short notes on any **two** of the following : 5×2

(a) Register organization of 8086

(b) Data transfer schemes

(c) Bus Controller 8288

(d) DMA Controller.