Registration No. :

Total number of printed pages – 2

B. Tech

CPEC 5305 (Old)

Sixth Semester (Back) Examination – 2013

MICROPROCESSOR AND MICROCONTROLLER

BRANCH : AEIE

QUESTION CODE : B365

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) How microprocessor distinguishes between Instruction and Data ?

   (b) What is the number of address line needed to access 32KB of memory in 8085 Microprocessor ?

   (c) Differentiate between memory mapped I/O and I/O mapped I/O.

   (d) What is the minimum and maximum value of segment address a segment register can accommodate in 8086 Microprocessor ?

   (e) Distinguish between minimum and maximum mode in 8086 microprocessor.

   (f) Explain the conflict between stack and bank1 in 8051 microcontroller.

   (g) What is the time period if the clock frequency of a Microprocessor is 10MHz ?

   (h) What is the function of RS1 and RS0 bits in 8051 microcontroller ?

   (i) Explain CALL-RETURN structure with reference to 8085 microprocessor.

   (j) How many segments 80386 microprocessor can support ?

2. (a) Draw the Timing diagram of MOV A, M in 8085 Microprocessor.   5

   (b) Explain the Channels and registers of 8257 DMA Controller. Is it possible to change the priority of the channels.   5

P.T.O.

3. (a) Explain the function of direction, Trap and Interrupt Flags in 8086 Microprocessor.   5

    (b) What is IVT ? How much memory it takes in 8086 Microprocessor ? Justify.   5

4. (a) Explain the block diagram of 8255 PPI.   5

    (b) Write the control word content in I/O mode of 8255. What is the control word content in I/O mode, mode-0 to initialize Port-A as input, Port-B as output and Port-C output ?   5

5. Draw the memory mapping technique and interfacing circuit to interface 4KB memory to 8085 microprocessor. Available chips are 2KB EPROM and 2KB RAM. Use suitable mapping.   10

6. (a) Discuss the internal architecture of 8051 microcontroller. How many I/O ports are there ?   5

    (b) Explain the TMOD and TCON registers of 8051 microcontroller.   5

7. (a) Explain the interrupts of 8085 microprocessor. Distinguish between Vectored and non-vectored interrupts.   5

    (b) Explain the function of Interrupt Request Register (IRR) in 8259A. What is ICWs and OCWs in 8259A ?   5

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

    (a) Stack Pointer and Program Counter

    (b) Superscalar architecture in Pentium processor

    (c) Serial Communication in 8051 microcontroller

    (d) HOLD and HLDA.