Registration No. :

Total number of printed pages – 2

Sixth Semester (Special/Back) Examination – 2013

MICROPROCESSOR AND MICROCONTROLLER

BRANCH(S) : CSE, EEE, ELECTRICAL

QUESTION CODE : E 328

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) Distinguish between FETCH and EXECUTE Cycle in 8085 microprocessor.
    (b) What is the significance of FFFF0H in 8086 Microprocessor ?
    (c) Explain the operation of Direction Flag and Trap Flag in 8086 Microprocessor.
    (d) State the Conflict between stack and Bank1 in 8051 microcontroller.
    (e) What is the difference between ACALL and LCALL in 8051 micro-controller ?
    (f) Distinguish between RISC and CISC architecture.
    (g) What is single and multiprocessor mode in 8086 Microprocessor ?
    (h) What is the range of segment address in 8086 ? Calculate the physical address if the content of CS: A000H and DS: 3628H ?
    (i) Write down the control word content of 8255 in I/O mode, mode-1 to initialize Port-A as input, Port-B as output and Port-C is not used.
    (j) What is the size of each page in 80386 paging mechanism ?

2. Draw the memory mapping technique and interfacing circuit to interface 8KB memory to 8085 microprocessor. Available chips are 4KB EPROM and 4KB RAM. Use suitable mapping.   10

3. Explain the Maximum mode system configuration of 8086 Microprocessor and list the functions performed by the signals.

10

4. Explain the following 8086 pins :

2 × 5

 (a) $\overline{\text{TEST}}$

 (b) READY

 (c) $\overline{\text{LOCK}}$

 (d) QS1, QS0

 (e) MN/MX

5. (a) Explain the interrupts of 8085 microprocessor. What do you mean by Hardware and Software interrupts in 8085 Microprocessor ?

5

 (b) Explain the physical memory organization of 8086 Microprocessor. Why the even address is given preference in 8086 Microprocessor ?

5

6. (a) Write a program to create a square wave of 33% duty cycle on bit3 of port1 in 8051 microcontroller.

5

 (b) Explain the protected mode operation of 80386 microprocessor.

5

7. (a) Explain the types of error that may occur during data reception in 8251 USART.

5

 (b) Explain the various addressing modes of 8051 microcontroller.

5

8. Write short notes on any **two** of the followings :

5 × 2

 (a) 8259 Programmable Interrupt Controller

 (b) CALL-RETURN

 (c) STACK and SUBROUTINE

 (d) Register organization of 8257 DMA Controller.