Code No. : 5145

FACULTY OF ENGINEERING
B.E. 3/4 (ECE) I Semester (Main) Examination, December 2011
MICROPROCESSORS AND INTERFACING

Time : 3 Hours] [Max. Marks : 75

Note : *Answer* ***all*** *questions from Part* ***A****. Answer* ***any five*** *questions from Part* ***B****.*

PART – A **(25 Marks)**

1. Define the terms instruction cycle, machine cycle and T-state.
2. Write advantages and disadvantages of segmented memory used in 8086 based systems.
3. List out various conditional JUMP instructions of 8086.
4. Explain the function of 'EQU' Directive.
5. What is BSR mode of PPI (8255) ?
6. What do you understand by priority of a device ? How can priority of a device can be altered using S/w.
7. Specify the mode word of 8251 USART for the following specifications :
   a) Asynchronous mode
   b) Odd parity
   c) Two-stop bits.
8. Draw the interface diagram of 8086 with matrix key board.
9. Write the features of 80286.
10. What is memory management ?

PART – B **(50 Marks)**

11. a) Draw the pin out diagram of 8086 in minimum mode of operation and write the function of each pin in detail.
    b) Explain the functions of BIU of 8086.

12. a) Write a delay procedure which produces 3.33 mS delay when run on an 8086 with 5 MHz clock and write a main line program which uses this procedure to output a square wave on bit Do of port FFFAH.

    b) Explain 3 methods of passing parameters to a procedure.

13. a) Design a memory interface for the following specifications :

        i) 8 k bytes of ROM using 4k x 8 ROM chips

        ii) 8 k bytes of RAM using 2k x 8 RAM chips

    Show the address decoding lines and memory map.

    b) Explain all modes of operation of 8254 programmable interval timer with the help of their timing diagrams.

14. a) Explain the functions of DMA controller and different modes of DMA data transfer.

    b) Distinguish between synchronous and Asynchronous data transfer.

15. a) Write an overview of 80486 and pentium processors.

    b) Write a brief note on virtual mode of operation of 80386.

16. a) Briefly explain branching instructions in 8086.

    b) Write an ACP to detail a key press when a 4 x 4 matrix key board is interfaced to 8086.

17. Write short notes on **any 2** :

    a) Numeric data processor

    b) Serial mode of data transfer using USART

    c) Assemblers.