Code No. 6096

FACULTY OF ENGINEERING

B.E. 3/4 (ECE) I – Semester (Main) Examination, November 2013

Subject : Microprocessors and Microcontrollers

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. Draw the write cycle timing diagram for 8086 minimum mode operation. 3

2. How does 8086 differentiate between an opcode and instruction data? 2

3. List out the techniques used for passing parameters to procedures. 2

4. Mention the advantages of DMA. 3

5. Interface 8051 with 256KX8 NV-RAM. 3

6. Write an ALP for 8051 to complement the upper nibble of given byte 57H. 2

7. Describe the following 8051 instructions with an example. 3
   a) XCHD b) MOVX c) JNB

8. Differentiate between memory mapped I/O and I/O mapped I/O. 2

9. Write an ALP for the 8051 to transfer letter "M" serially at 96000 band, continuously. 3

10. Define a macro "SQUARE" that calculates square of a number. 2

PART – B (50 Marks)

11.a) Draw and discuss interrupt structure of 8086 in detail. 6
   b) Explain the following addressing modes of 8086 with an example. 4

   1. Register relative
   2. Register indirect
   3. Relative based indexed

12.a) Write an ALP for 8086 to find square root of a two digit number (Assume that the number is a perfect square) using assembler directives. 5
   b) Explain about 8086 debugging tools. 5

13.a) Interface two 8K chips of RAM and two 8K chips of EPROM with 8086. 5
   b) Draw the interfacing diagram 8279 with 8086 and explain. 5

14.a) Draw the port 0 structure of 8051 and explain. 5
   b) Write an ALP for 8051 to read 10 bytes of data from internal ROM starting at 0400H and save the data in external RAM starting at 7000H. 5

15.a) Interface A/D converter with 8051 and explain. 6
   b) Give the connections of 8255 with 8051 and also mention the 8255 port addresses. 4

16. Draw the internal architecture of 8251 and interface with 8086 in detail. 10

17. Write a short notes on any two : 10`
   a) Stepper motor interfacing with 8051 b) Bit addressable features of 8051
   c) Instruction formats of 8086

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