END TERM EXAMINATION

SIXTH SEMESTER [B.TECH./M.TECH.] MAY-JUNE-2015

Paper Code: IT302   **Subject: Microprocessors**

Time : 3 Hours   **Maximum Marks :60**

Note: Attempt any five questions including Q.no.1 which is compulsory. Internal choice is indicated.

1. (a) What is the difference between general purpose registers segment registers in 8086 microprocessor? **(2x10=20)**
   (b) Explain the instructions:
      LEA, ADR
      LES BX, 5000H
   (c) What is microcontroller?
   (d) Explain the 8254 control word format.
   (e) Difference between instructions INT N and INTO.
   (f) Explain Dual slope A/D converter.
   (g) Write 8087 control and status word formats.
   (h) Narrate the categories in which instruction set of 8086 is categorized.
   (i) Interface two 4Kx8 EPROMS and 4Kx8 RAM chips. Select suitable maps.
   (j) Explain the following directives for Intel 8086 microprocessor ENM, EQU and PTR.

2. (a) Compare the 8085 and 8086 microprocessor. **(5)**
   (b) Explain the 80286, Pentium Processors and microcontrollers. **(5)**

3. (a) Draw the architecture diagram of 8086. Explain the signals used to interrupt the activities of the microprocessor. **(5)**
   (b) Explain BIU and EU in 8086 microprocessor. **(5)**

OR

4. (a) Compare and explain Maximum Mode and Minimum Mode operation of 8086 microprocessor. **(5)**
   (b) Compare 8086 processor with 8088. **(5)**

5. (a) Explain the different addressing mode in their proper format with suitable examples for 8086 microprocessor. **(5)**
   (b) (i) What is the difference between DAA and AAD instructions? **(2.5)**
      (ii) Show the content of flag registers and AL in the following programme: If AL=59, BL=35 and following instructions executed **(2.5)**
         ADD AL
         BL DAA

OR

6. (a) Write an assemble language program to- **(5)**
      (i) Arrange a given series of hexadecimal bytes in ascending order.
      (ii) Find square root of two digit number. Assume that the number is a perfect square.
   (b) Explain program development algorithm for Assembly language program and its assembly language program development tools. **(5)**

7. (a) Explain different types of 8086 interrupt. **(5)**
   (b) Explain the following:- **(5)**
      (i) Control word and its different modes with example timing diagram for 8254 programmable peripheral device.
      (ii) Draw analog circuit connections for ADC 1208 12-bit D/A convertor.
      (iii) Why 8087 is known as coprocessor?
      (iv) What is the difference Single Handshake I/O and Double-Handshake data transfer for parallel data transfer?

8. (a) Interface 16 bit 8255 ports with 8086 at 80H as an I/O address of port A. Interface five 7 segment displays with 8255. Write a sequence of instructions to display 1,2,3,4 and 5 over five displays continuously as per their position starting with 1 at the MSB position. **(5)**
   (b) Explain the Architecture and signal descriptions for 8253 chip. Also, explain the different operating modes of programmable timer device (8253). **(5)**

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