R13

No: 126EM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, May - 2016
MICROPROCESSORS AND MICROCONTROLLERS
(Common to ECE, BME)

Time: 3 hours   Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)   List out different segmentations presented in 8086 Microprocessor.   [2]
  b)   Draw the flag register of 8086 Microprocessor and explain function of each flag. [3]
  c)   Explain one byte and two byte instruction frame format.   [2]
  d)   List the data transfer instruction set of 8086 microprocessor.   [3]
  e)   Draw the BSR mode frame format.   [2]
  f)   Explain the concept of interrupt service routine of 8086 microprocessor.   [3]
  g)   Explain register set of 8051 Microcontroller.   [2]
  h)   List out the difference between microprocessor and microcontroller.   [3]
  i)   Draw the T0 and T1 registers of 8051 microcontroller.   [2]
  j)   Explain the hard ware interrupts of 8051 microcontroller with examples.   [3]

PART - B

(50 Marks)

2.a)   Draw the register organization of 8086 Microprocessor and explain it.
  b)   Explain the minimum mode pins of 8086 Microprocessor in detail.
  c)   Explain the concept of physical address calculation of 8086 microprocessor.   [3+3+4]

OR

3.a)   Draw the internal architecture of 8086 microprocessor and explain its operation.
  b)   Draw the timing diagram of minimum mode write operation and explain it.   [5+5]

4.a)   Define addressing mode and explain different addressing modes used in 8086 Microprocessor with examples
  b)   List out different assembler directives used in 8086 microprocessor with examples.   [5+5]

OR

5.a)   Write an assembly language program to find the largest number in an array of 8-bit numbers.
  b)   List the string manipulation instruction set of 8086 microprocessor with examples.   [5+5]

Draw the internal architecture of 8255 PPI and explain its operation.
Draw the interacting diagram of A/D convertor with 8086 microprocessor and explain its operation.   [5+5]

OR

a)   Explain the concept of keyboard and interfacing along with block diagram.
b)   Explain the concept of methods of serial communication with examples.   [5+5]

8.a)   Draw the internal architecture of 8051 Microcontroller and explain its operation.
  b)   Draw the PSW and TCON registers of 8051 microcontroller.   [5+5]

OR

9.a)   Explain the different futures of 8051 microcontroller in detail.
  b)   Draw the pin diagram of 8051 microcontroller and explain the function of each pin in detail.   [5+5]

10.a)   Explain the different addressing modes used in 8051 microcontroller with examples.
   b)   Draw the SCON register frame format and explain it.   [5+5]

OR

11.a)   List out the different instruction set of 8051 microcontroller and explain with examples.
   b)   Write an assemble language program for LED blinking in 8051 microcontroller.   [5+5]

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