R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, May - 2017
MICROPROCESSORS AND MICROCONTROLLERS
(Common to ECE, ETM)

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) Name the fourteen registers used for 8086 microprocessor?   [2]
  b) Draw the flag register bits in 8086 microprocessor.   [3]
  c) Write a program to find the factorial of 4 using 8086 microprocessor.   [2]
  d) What is the purpose of using macro's?   [3]
  e) What are the different memories used to interface 8086 microprocessor?   [2]
  f) Give the serial communication standards.   [3]
  g) Write about PSW used in 8051 microcontroller.   [2]
  h) Write TCON special function register used in 8051 microcontroller.   [3]
  i) What are different types of interrupts are used in 8051 microcontroller?   [2]
  j) Draw the timer/counter control logic diagram in 8051 microcontroller.   [3]

PART - B

(50 Marks)

2.a) Explain about the architecture of 8086 microprocessor with a neat sketch.
  b) Draw the timing diagram used for minimum mode of chip diagram of 8086 microprocessor.   [5+5]
OR
3.a) Explain signal description of 8086 microprocessor.
  b) What is an interrupt? Explain various types of interrupts in 8086 microprocessor. [5+5]

4.a) Explain various addressing modes of 8086 microprocessor.
  b) Describe the instruction set of 8086 microprocessor: [5+5]
     i) SHR   ii) ADD   iii) DAA   iv) CMP   v) CBW
OR
5.a) Write a program for finding multibyte addition using 8086 microprocessor.
  b) Write a program to print a string 'MICRO' using 8086 microprocessor.   [5+5]

6.a) Describe the interfacing of D/A Converter with a neat sketch.
  b) Explain about the mode 2 operation used in 8255 PPI in detail.   [5+5]
OR
7.a) Explain about the architecture of 8251 USART with a neat sketch.
  b) Write a short notes on synchronous serial data transfer.   [5+5]

8.a) Write an overview of 8051 microcontrollers.
 b) Write a program to find 1's and 2's complement of a number using 8051 microcontroller. [5+5]

OR

9.a) Write a program to find 8-bit subtraction using 8051 microcontroller.
 b) Write a program to add 16 bit numbers using 8051 microcontroller. [5+5]

10.a) Describe the timer mode 0 used in 8051 microcontroller with a neat sketch.
  b) Describe the timer mode 1 used in 8051 microcontroller with a neat sketch. [5+5]

OR

11.a) Describe the timer mode 3 used in 8051 microcontroller.
  b) Write a short notes on external interrupts in 8051 microcontroller. [5+5]

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