

Code 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]

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

OR

- 7.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 features 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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