

R13

Code No: 126AK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year II Semester Examinations, May - 2019****MICROPROCESSORS AND INTERFACING DEVICES****(Electrical and Electronics Engineering)****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) Define Pipeline process? [2]
- b) Draw the Flag register of 8086 microprocessor. [3]
- c) Define macro. [2]
- d) List out the different Instruction formats used in 8086 Microprocessor in detail. [3]
- e) What is need of DMA? [2]
- f) List out different ICW's and OCW's of 8259 PIC. [3]
- g) Define trouble shooting. [2]
- h) Define the terms Simplex, Half Duplex and Full Duplex Communication standards. [3]
- i) Define Microcontroller? List out different 8-bit Microcontroller in detail. [2]
- j) List out the few comparison of Microprocessor and Microcontroller in detail. [3]

PART - B**(50 Marks)**

- 2.a) Draw the internal architecture of 8086 Microprocessor and explain the function of each block.
- b) Explain the physical memory organization of 8086 Microprocessor with one example. [5+5]

OR

- 3.a) Draw the pin diagram of Maximum mode of 8086 microprocessor and explain the function of each pin.
- b) Draw the Minimum mode read operation timing diagram and explain its operation of 8086. [5+5]

- 4.a) Define addressing mode? List out the different Addressing modes used in 8086 Microprocessor and explain each addressing mode with one example.
- b) Write an assembly Language program to find the largest number in an 8-bit array. [5+5]

OR

- 5.a) What is assembler directives? List out different assembler directives used in 8086 Microprocessor in detail.
- b) Write an assembly Language program to find Factorial of an 16-bit number. [5+5]

- 6.a) Draw the interfacing diagram of interfacing of a two $4K \times 8$ RAM and two $8K \times 8$ ROM with 8086 microprocessor along with memory maps.
b) Draw and Explain the concept of IC DAC 0808 along with interfacing diagram. [5+5]
- OR**
- 7.a) Draw the interrupt vector table of 8086 microprocessor and explain its importance.
b) Draw the internal architecture of 8259 PIC and explain its operation in detail. [5+5]
- 8.a) Draw the internal architecture of 8251 USART and explain the function of each block in detail.
b) Write short notes on IEEE -488 protocol in detail. [5+5]
- OR**
- 9.a) List out the different serial communication standards? Explain the Asynchronous serial communications with circuit diagram.
b) Explain the procedure how RS-232 is interfaced with Microprocessor with one example. [5+5]
- 10.a) Draw the internal architecture of 8051 microcontroller and explain its operation in detail.
b) Explain the following Special function register in detail: [5+5]
(i) TCON (ii) TMOD
- OR**
- 11.a) Write short notes on following registers of 8051 microcontroller:
(i) PCON (ii) SCON (iii) PSW
b) List out different applications of 8051 Microcontroller in detail. [8+2]

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