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BT-5/D-13

**MICROPROCESSORS AND INTERFACING****Paper-ECE-311-E***Time allowed : 3 hours]**[Maximum marks : 100**Note : Attempt any five questions by selecting at least one question from each unit.***Unit-I**

1. (a) Draw the internal block diagram of 8086 and explain the functions of BIU and EU. 15
- (b) Discuss the role of wait state in the operation of 8086 microprocessor. How it is generated ? 5
2. (a) What is the difference between CISC and RISC instructions? 5
- (b) What are the functions of IC 8284 in the 8086 systems? 5
- (c) Explain the function of queue in 8086. 5
- (d) Draw and explain the bit configuration of Intel's 8086 PSW format. 5

**Unit-II**

3. (a) State and explain the different instruction formats of 8086. 10
- (b) Explain the following 8086 directives :  
OFFSET, ASSUME, PROC, PUBLIC, EXTRN.

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4. (a) What is the difference between the instructions :  
(i) MOV AX, TABLE-ADDR and LEA AX, TABLE-ADDR  
(ii) NEG BYTE PTR [BX] and NOT BYTE PTR [BX]. 10
- (b) Write a program that reverses an array of thirty 16-bit integers. The array should be reversed in place, without copying to another array. 10

**Unit-III**

5. (a) What do you understand by the term DRAM controller? Discuss the working of TMS 4500 controller in brief. 12
- (b) Explain 8086 interfacing to memory. 8
6. What do you understand by minimum and maximum mode operation of 8086? Draw the circuit diagram showing the interfacing of 8086 with  $2 \times 512$  K of memory. Assume that 8086 is to be used in minimum mode. Explain clearly how the demultiplexing of address, data and control bus has been done. Detail the sequence of events that takes place for fetching an instruction code from the memory. 20

**Unit-IV**

7. (a) Explain serial I/O port design. 6
- (b) What is the difference between memory mapped I/O and isolated I/O? Give advantages and disadvantages of each. 8
- (c) Explain interfacing of 8086 with any high power device. 6
8. (a) Explain the interrupts and interrupt response of 8086. 10
- (b) Explain applications of hardware interrupt. 10

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