

BT-5/D06 8915

Microprocessor and Interfacing (EC and Electrical)

Paper : ECE-311 E

Time : Three Hours]

[Maximum Marks : 100

Note :- Attempt any FIVE questions.

UNIT-I

- (a) If the Data Segment Register DS contains 4000 H, what physical address will the instruction MOV AL, [234 BH] read ? 5
- (b) Discuss the advantages of segmentation of address space in 8086 microprocessor. 5
- (c) Discuss how 8086 operates in maximum mode. Compare minimum mode and maximum mode of operation. 10
- (a) Give the pin diagram of 8086 μ p chip. Discuss the functions of each pin. 7
- (b) Discuss how 8086 C/K and reset signals are generated using 8284. 7
- (c) Discuss the role of 'WAIT STATE' in the operation of 8086 μ p. How these are generated ? 6

UNIT-II

- (a) Using WHILE - DO structure, draw a flow chart. Write Pseudo code and 8086 programme for the following problems. If the temperature of an oven is less than 100°C, turn the heater ON and wait for the temperature to reach 100°C. If the temperature is at or above 100°C then turn the heater OFF. 10
- (b) What is the difference between recursive and reentrant procedure ? Write the programme for finding the value of n factorial. 10

Contd.

to compute the averages of 4 stored in an array in memory.

- (b) Spot the grammatical syntax errors in the following instructions :
- (i) MOV BH, AX
- (ii) IN BL, 04H
- (iii) ADD AL, 2073 H.
- (c) What do you understand by pointers and index registers in 8086 μ p ? Discuss in brief.

UNIT-III

5. (a) What do you understand by the term DRAM Controller ? Discuss the working of TMS 4500 Controller in brief.
- (b) Draw and discuss the timing diagram of 8086 μ p during read and write operations.
6. (a) How address decoding is done in 8086 while interfacing memory chips ? Describe with the help of a suitable example.
- (b) What is the difference between the memory-mapped I/O and direct I/O ? Give the main advantages and disadvantages of each.

UNIT-IV

7. (a) Describe the use of CAS 0, CAS 1, and CAS 2 lines in a memory system with a cascaded 8259A.
- (b) Describe the functions with pin diagram of the following chips : (i) 8255 (ii) 8251.
8. (a) Describe the role of a DMA chip in Microprocessor Based Systems.
- (b) The starting address of the subroutine is 934 H : 125 H. If the interrupting device supplies vector type 41 H, what are the locations where the starting address of the subroutine is stored ?
- (c) Write short note on "Microcomputer Video Displays".