Reg. No. :

Y 1546

M.C.A. DEGREE EXAMINATION, AUGUST/SEPTEMBER 2008.

Third Semester

DMC 1702 — MICROPROCESSOR AND ITS APPLICATIONS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the structure of program status word in 8085.

2. In the following instruction sequence of 8085, find the carry flag. What are the contents of the accumulator?

```
2000  37     STC       set carry flag
2001  3E   MVI A, 01    |A|← 01
2002  01
2003  1F     RAR
```

3. Differentiate Indexed addressing and based indexed addressing mode.

4. Write a program to convert a binary into a BCD number using 8086 instruction set.

5. What are predefined interrupts in 8086?

6. How is memory function and selection accomplished using 8086?

7. What is the work of task state segment in a 80386 microprocessor?

8. What are the logical instructions in 80386 beyond these of 80286?

9. How will you interface an LRC 7040 printer to the 8085 using direct microcomputer control?

10. Write the Various Modes of operators of 8279 keyboard / display interface unit.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the 8085 architecture block diagram in detail. (8)

(ii) Write an 8085 assembly language program to perform a parity check on a 8 bit word in location 4000_{16}. If parity is odd store DD_{16} in location 4000_{16}. If parity is even store EE_{16} in location 4000_{16}. (8)

Or

(b) (i) Write an 8085 assembly language program to subtract a 16 bit number in locations 3000H and 3001H from an center 16-bit number stored in locations 3002H and 3003H. Store the result in register pair D, E. (8)

(ii) Discuss the Interrupts operation in 8085 Process. (8)

12. (a) Explain the architecture block diagram of 8086 microprocessor chip. (16)

Or

(b) Explain various types of instruction sets in the 8086 with MOV instruction in detail. (16)

13. (a) Explain the 8086 read and write cycle in the minimum mode in detail.(16)

Or

(b) Design a memory interfacing circuit using 8086 with 4 K × 8 RAM and 4 K × 8 ROM. Make the suitable assumptions. (16)

14. (a) (i) Explain 80386 microprocessor system with a neat block diagram. (8)

(ii) Discuss the protected mode operation of 80386. (8)

Or

(b) (i) Describe the operation of 80386 memory management unit and paging unit. (8)

(ii) Discuss on the various addressing modes of 80386. (8)

15. (a) (i) With the block diagram explain the keyboard/display interface. (8)

(ii) Discuss the display functions associated with a CRT controller. (8)

Or

(b) Write short notes on :

(i) Universal asynchronous receivers / transmitters (UARTs). (6)

(ii) DMA controllers. (5)

(iii) Interfacing 8085 to the LRC 7040. (5)