T 8173

B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

Fifth Semester

Mechatronics Engineering

EC 1318 — MICROPROCESSORS AND APPLICATIONS

(Regulation 2004)

Three hours — Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the function of ALE signal in 8085?

2. What will be condition of flags after logical AND and OR operations in 8085?

3. Identify the addressing modes of the following instruction.
   (a) LXI rp, dip
   (b) ADD reg
   (c) ADC M
   (d) RAR.

4. What is memory access time?

5. List the software and Hardware interrupts of 8085.

6. Write the format of ICM in 8259.

7. What is USART?

8. What is resolution and conversion time in ADC?

9. What are the applications of stepper motor?

10. List the functions performed by 8279.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the different types of addressing modes of INTEL 808 with an example. (10

(ii) Write an assembly language program to multiply two numbers of bit data stored in memory 4200 H and 4201 H and store the produ in 4202 H and 4203. (6

Or

(b) (i) Explain the architecture of INTEL 8085 with the help of a bloc diagram. (10

(ii) Explain the following instruction of 8085 with example. (6

(1) LDAX rp

(2) IN add 8

(3) ADC M.

12. (a) (i) Design a micro processor system for the 8085 microprocessor such that it should contain 2kB of EPROM $ 2kB of RAM with startin addressing 0000 H and 6000 H respectively. (10

(ii) Distinguish between full address decoding and partial addres decoding. (6

Or

(b) (i) Explain how 8085 interrupts are enabled, disabled and masked. (8

(ii) Discuss in detail about different data transfer schemes. (8

13. (a) Explain the operation of 8253 timer along with its different modes. (16

Or

(b) With a suitable block diagram, explain the operation of programmable interrupt controller. (16

14. (a) (i) Explain how ADC 0809 is interfaced with 8085 microprocess. (6

(ii) Discuss in detail about interfacing between matrix keypad and 8085 microprocessor through 8255. (10

Or

(b) (i) With a neat sketch, describe the keyboard and display interfacing using 8279. (8

(ii) Write an assembly language program with neat block diagram for detecting power failure using 8253. (8

Design the hardware and software of microprocessor based temperature ON/OFF controller. (16)

Or

Write an assembly language program to rotate the stepper motor clockwise for 3 revolutions and anticlockwise for 4 revolutions. (16)
