B 352

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Sixth Semester

Electrical and Electronics Engineering

EE 340 — MICROPROCESSORS AND APPLICATIONS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. How many machine cycles are needed to execute STA 1800.

2. Which instruction can be used to find status of pending interrupts?

3. MOV AX, 4000H

   MOV DX, 500H

   MOV BX, 10H

   DIV BX.

   What will be the contents of AX and DX after the execution of the instructions above?

4. The last executable instruction in a procedure must be a ————————.

5. Mention any two uses of PWM output.

6. In 8096 how much time is taken execute 32 bit by 16 bit division.

7. State the disadvantage of memory mapped I/O scheme.

8. For a A/D convertor circuit why V_{ref} should be stabilized supply.

9. What is meant by burst mode of data transfer in DMA.

10. Write down the function of $\overline{OBF}$ in 8255.

PART B — ($5 \times 16 = 80$ marks)

11. With an example, explain the addressing modes of 8086.

12. (a) (i) Write a program to divide a 16 bit number by 8-bit number. (10)

(ii) Draw and explain the timing diagram of IN instruction. (6)

Or

(b) (i) Design a microprocessor system to interface an 8KX8 EPROM and 8KX8 RAM. (8)

(ii) Write a program to arrange N numbers in ascending order. (8)

13. (a) Explain the onchip D/A, A/D convertors realtime clock and watchdog timer facilities of 8031.

Or

(b) (i) Describe the automatic process control application using 8096 microcontroller. (12)

(ii) Write briefly about cross assemblers. (4)

14. (a) Design an interface circuit needed to connect DIP switch as an input device and display the value of the key pressed using a 7 segment LED display. Using 8085 system. Write a program to implement the same. (16)

Or

(b) (i) Explain how 8085 can be connected to an A/D convertor. Describe the signals involved in the process of conversion. (12)

(ii) Explain the sample a hold IC. (4)

15. (a) Port A is designated as input port for a keyboard with interrupt I/O and Port B is designated as output port for a printer with status check I/O. Write a program to accept a character from keyboard and to send a characters to printer.

Or

(b) (i) Write a program to demonstrate mode 3 operation of times 8254. (8)

(ii) Bring about the features of 8251 and 8259. (8)