

S 9134

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

Fourth Semester

Mechatronics Engineering

EE 238 — MICROPROCESSOR AND INTERFACING

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How is multiplexed address and data bus demultiplexed?
2. Compare mini and large computers.
3. What is meant by tri-state buffer?
4. What are the advantages of DMA data transfer?
5. What is meant by keyboard debouncing?
6. What is the major difference between timer and counter operation?
7. What are precautions for interfacing high power devices with microprocessor?
8. What is meant by resolution of ADC?
9. Explain the differences between minimum and maximum mode operation in 8086 microprocessor.
10. List out the various addressing modes of 8086 microprocessor.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the architecture and organization of 8085 microprocessor in detail. (16)

Or

- (b) Explain the instruction set of 8085 microprocessor by giving at least two examples in each category. (16)

12. (a) Design a circuit to interface 8KB ROM and 16KB RAM with 8085 microprocessor. Use first 8KB memory space for ROM and the next 16 KB address space for ROM. (16)

Or

- (b) Explain the working of Programmable interrupt controller (PIC) with suitable block diagram. Also, explain the interfacing details of PIC with microprocessor. (16)
13. (a) Draw the functional block diagram of programmable peripheral interface and explain the Mode 1 operation in detail. (16)

Or

- (b) Explain the working of programmable keyboard/display interface in detail. (16)
14. (a) Draw the interfacing circuit of ADC and DAC with microprocessor and explain. (16)

Or

- (b) Explain the hexadecimal keypad interfacing with 8085 microprocessor with suitable hardware diagram. (16)
15. (a) Draw the internal architecture diagram of 8086 microprocessor and explain the functions of each block in detail. (16)

Or

- (b) Describe interrupt and multiprocessor architecture support of 8086 microprocessor. (16)