

**N 1236**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004.

Fourth Semester

Information Technology

IF 250 — MICROPROCESSOR AND MICROCONTROLLER APPLICATION

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the function of ALE and TRAP pins in 8085.
2. If the frequency of the crystal connected to 8085 is 6 MHz, calculate the time to fetch and execute NOP instruction.
3. What is the difference between timer and counter operation in 8051?
4. What is the function of IP register in 8051?
5. What is the role of TF and IF flags in the flag register of 8086?
6. What is the operation carried out when 8086 executes the instruction MOVSB?
7. Write the format of BSR control word in 8255.
8. An 8-bit ADC has a reference voltage of 5V. What is the digital output when the input to the ADC is 2.5V?
9. Name any four electronic devices which are used to interface high power devices with microprocessor.
10. What is a load cell?

PART B — (5 × 16 = 80 marks)

11. (i) Draw the timing diagram of I/O read cycle in 8085 and explain it. (8)
- (ii) Interface an 8-bit DIP switch with 8085 such that the address assigned to it is FFH. (8)

12. (a) Explain the different modes of operation of timers in 8051 in detail with its associated registers. (16)

Or

- (b) Explain the different modes of operation by serial part in 8051 in detail with its associated registers. (16)

13. (a) With neat functional block diagram explain the architecture of 8086 microprocessor. (16)

Or

- (b) With neat functional block diagram, explain the architecture of 80486 microprocessor. (16)

14. (a) Explain the transmission and reception of serial data using 8251 indicating the function of various registers in it. (16)

Or

- (b) Interface an 8-bit ADC with one of the 8-bit microprocessor. Draw the flowchart and write assembly language program to read 100 bytes of digital data from ADC continuously and store them in memory, starting from the address 2000H. (16)

15. (a) With necessary circuit diagram and flowchart, explain microcomputer based smart scale in detail. (16)

Or

- (b) Explain about interfacing microcomputer port to dc high power device and ac high power device in detail with an example for each. (16)