

**K 1027**

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

Fifth Semester

Electronics and Communication Engineering

EC 331 — MICROPROCESSOR AND APPLICATIONS

(Common to : Bio-medical Engineering)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the differences between 8085 and 8086?
2. What are the two compare instructions available in 8085?
3. Write an ALP for time delay using a Register pair available in 8085.
4. What is the importance of special function registers available in 8051 micro controller?
5. What is the job of the TMOD register?
6. What is a segment override prefix? Give an example.
7. Write a program segment that will carry out the following binary operation using 8086 instruction.  $W \leftarrow X + Y + 24 - Z$ .
8. Specify the bit of a control word for the 8255. Which differentiates between I/O mode and the BSR mode?
9. What is the voltage levels used in RS-232?
10. What is a shaft encoder?

PART B — (5 × 16 = 80 marks)

11. (i) Draw the Architectural block diagram of 8086. (10)  
(ii) Explain any three addressing modes of 8086. (6)
12. (a) (i) Discuss the interrupt system of 8085. (8)  
(ii) Draw the timing diagram for memory read operation performed by 8085 (Use associated signals). (8)
- Or
- (b) (i) What are the different addressing modes used in 8085? Explain with an example. (10)  
(ii) What are the memory mapped I/O and I/O mapped I/O — Explain. (6)
13. (a) Explain with neat diagram of port pin & circuits that connect the 8051 microcontroller to the outside world. (16)
- Or
- (b) With neat sketch, describe the hardware features of 8051 microcontroller. (16)
14. (a) What are the different modes of serial communication? Draw the internal block diagram of 8251 and explain how the CPU uses it for serial communication. (16)
- Or
- (b) (i) What are the different modes of DMA transfer? (4)  
(ii) With a neat sketch show how a DMA controller is connected to the 8085 Processor. Outline the sequence of operation needed in performing a DMA transfer. (12)
15. (a) With a block diagram and flow chart, explain the operation of a Microcomputer based smart scale. (16)
- Or
- (b) Show how will interface a stepper motor to the microprocessor. (16)