

ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : DECEMBER 2009

REGULATIONS - 2007

FIFTH SEMESTER - ELECTRICAL & ELECTRONICS ENGINEERING

070280045 – MICROPROCESSORS AND MICROCONTROLLERS

TIME : 3 Hours

Max.Marks : 100

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. Name the operations that microprocessor can perform.
2. Calculate the address lines required for an 8K – byte memory chip.
3. Define instruction cycle and machine cycle.
4. Differentiate microprocessor and microcontroller.
5. What do you mean by bit, byte, nibble and word?
6. Mention the advantage of assembly language compared to high level language.
7. What is the use of BSR mode in 8255?
8. What does the mode word format in 8251 mean?
9. What are the two modes that are supported by 8086?
10. What is a code segment?
11. Write the function of the following assembler directives – PAGE and ALIGN.
12. Differentiate linker and a debugger.
13. Mention some of the common features included in modern 8051 based microcontroller.
14. Justify with an example – 8051 is an accumulator based architecture.
15. Which are called as special function registers?
16. How many priority levels are present in 8051 interrupt structure?
17. Why 8051 is called as a Boolean processor?
18. Name any two applications of microcontroller.

19. What is the use of port 0?
20. Which location is referred to as top of the stack?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. Draw the functional block diagram of 8085 and explain.
22. a) Write short notes on different types of instructions based on the number of bytes with example. 6
b) Explain the addressing modes of 8085. 6
23. Explain the block diagram of programmable interrupt controller 8259 and explain how the interrupt operation is done.
24. a) Describe briefly how 8253 is interfaced with 8085 in memory mapped I/O with a neat diagram. 8
b) Write the advantage of segmentation in 8086. 4
25. a) Explain the control flags of 8086 in detail. 6
b) Write short notes on interrupts of 8086. 6
26. a) Briefly explain the addressing modes of 8051 with an example. 8
b) What happens when an interrupt occurs in 8051?. 4
27. a) Discuss the modes of operation of serial port communication of 8051. 8
b) Write the procedure to generate square wave using DAC interface. 4
28. Explain in detail – interfacing stepper motor.