

Register Number:

B.E. DEGREE EXAMINATIONS: NOV / DEC 2010

Fifth Semester

MECHATRONICS ENGINEERING

U07MH502: Microprocessors and Microcontroller

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 =10 Marks)

1. The register which keeps track of the execution of program is
 - a) Program counter
 - b) Stack pointer
 - c) Instruction Register
 - d) Accumulator
2. Which of the following flag is not available in 8085?
 - a) Zero
 - b) Parity
 - c) Overflow
 - d) Auxiliary carry
3. The highest priority DMA request is
 - a) DRQ0
 - b) DRQ1
 - c) DRQ2
 - d) DRQ3
4. Synchronous Transmission is _____ oriented
 - a) Character
 - b) Bit
 - c) Block
 - d) Word
5. The interface chip used for data transmission between 8085 and a 16 bit ADC is
 - a) 8259
 - b) 8254
 - c) 8255
 - d) 8251
6. In an 8085 microprocessor system with memory mapped I/O
 - a) I/O devices have 16 bit address
 - b) I/O devices are accessed using IN and OUT instructions
 - c) There can be a maximum of 256 input devices and 256 output devices
 - d) Arithmetic and logic operations can be directly performed with I/O data
7. 8051 consists of _____ timers
 - a) 3
 - b) 2
 - c) 4
 - d) 1
8. Pseudo-instructions are also called _____
 - a) Assembler
 - b) Assembler directive
 - c) Compiler Directive
 - d) Code control instructions
9. Frequently used keyboard configuration is _____
 - a) single key per line
 - b) double key per line
 - c) matrix
 - d) multiple key per line
10. Register banks are designated with address _____
 - a) 00-7F h
 - b) 00-FF h
 - c) 80-FF h
 - d) 00-1F H

PART B (10 x 2 = 20 Marks)

11. What is Microprocessor?
12. The address capability of 8085 is 64 KB. Explain.
13. What is the need for interfacing to I/O devices?

14. What are the ways in which the address space can be partitioned?
15. What is use of hand shake signal in 8255?
16. Define Overrun error?
17. Explain the operating mode2 of 8051 serial ports
18. List any four features of 8051 microcontroller?
19. What are the four types of memory in 8051 architecture?
20. What is the function of TB8 bit in Serial Communication?

PART C (5 x 14 =70 Marks)

21. a) Draw and explain the architecture of 8085 with neat sketch.

(OR)

- b) Draw and discuss the timing diagram for memory read and memory write operation of 8085 processor.

22. a) Discuss the synchronous mode of data transfer and asynchronous mode of data transfer.

(OR)

- b) (i) Describe the memory mapped I/O scheme. (7)
(ii) Explain the I/O mapped I/O scheme. (7)

23. a) Design a keyboard and display interfacing using 8279 with an example.

(OR)

- b) Explain Programmable Peripheral Interface with 8085 processor with neat sketch.

24. a) Draw the functional block diagram 8051 microcontroller and explain the function of each block.

(OR)

- b) Explain the various addressing modes in 8051 microcontroller.

25. a) Explain the interfacing of ADC and 8051 microcontroller with the aid of diagram

(OR)

- b) What are the serial data communication modes of 8051? Explain them in detail.
