Register Number:……..

B.E., DEGREE EXAMINATIONS MAY/JUNE 2013

Fifth Semester

MECHATRONICS ENGINEERING

MCT108: Microprocessors And Microcontroller

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10x1=10 Marks)

1. MVI C,50 belongs to _____ addressing mode

   (A) immediate (B) direct (C) register indirect (D) implied

2. Key makes and brakes contact is known as

   (A) key debouncing (B) Bouncing

   (C) Matrix keyboard (D) all the above

3. The function of OUT instruction is to move the data from

   (A) port address to ACC (B) ACC to port address

   (C) ACC to memory (D) memory to ACC

4. When the I/O device and the microprocessor match in speed, _____ data transfer scheme will be used

   (A) synchronous (B) asynchronous (C) DMA (D) serial

5. 8255 is a general purpose programmable I/O device used for _____data transfer

   (A) Serial (B) parallel (C) synchronous (D) none of the above

6. The 8279 normally provides a maximum of _____ seven segment display interface with CPU

   (A) 8 (B) 16 (C) 32 (D) 64

7. Special function registers are designated with addresses_____

   (A) 00-FF_H (B) 00-$7F_H$ (C) 80-FF_H (D) 000-FFF_H

8. In 8051, which interrupt has highest priority?

   (A) IE1 (B) TF0 (C) IE0 (D) TF1

9. Which bit of TMOD will exactly configure “timer/counter” as a timer or counter

   (A) TMOD 6 of timer 1 (B) TMOD 6 of timer 0

   (C) TMOD 3 of timer 1 (D) TMOD 2 of timer 1

10. In 8086 the overflow flag is set when

(A) the sum is more than 16 bits

(B) signed numbers go out of their range after an arithmetic operation

(C) carry and sign flags are set

(D) during subtraction

PART B (10 x 2 = 20 Marks)

11. List out all the available hardware interrupts of 8085.
12. Why data bus is bi-directional?
13. What are the incompatibilities that could rise while interfacing any two devices?
14. Compute the execution time of instruction LDA 2050_H if the T state duration is 2µs.
15. Compare memory mapped I/O and I/O mapped I/O.
16. Name the various machine cycles of 8085.
17. What are the tasks involved in keyboard interface?
18. Enlist the various flags in the PSW register.
19. Differentiate between SJMP and LJMP instruction.
20. Write all the addressing modes in 8086.

PART C (5 x 14 = 70 Marks)

21. a) Explain the architecture of 8085 microprocessor with a neat block diagram and also list its features.

(OR)

b) Draw the timing diagram of the following Instructions.

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STA  4250
MVI  A,  08
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22. a) Interface two numbers of 8KB EPROM and one number of 4KB RAM with 8085 Microprocessor. Explain the interface diagram and allocate binary addresses to memory ICs.

(OR)

b) Discuss in detail about the interrupt drive data transfer scheme.

23. a) With neat sketch, explain the functions of 8251.

(OR)

b) How ADC can be interfaced with 8085? Explain.

24. a) With neat sketch explain the architecture of 8051 microcontroller.

(OR)

b) List the various arithmetic instructions available in 8051 and Explain.

25. a) Describe the interfacing keyboard with 8051.

(OR)

b) Explain in detail about the interfacing of LCD with 8051 micro controller.

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