

(Please write your Exam Roll No.)

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**END TERM EXAMINATION**

SIXTH SEMESTER [B.TECH.] MAY-2010

**Paper Code: ETEE302****Subject: Microprocessors****Time : 3 Hours****Maximum Marks :75****Note: Attempt all questions. Internal choice is indicated.**

- Q1 (a) Explain the need of demultiplexing AD<sub>7</sub>-AD<sub>0</sub>. How it is done? (3)  
 (b) Explain the functions of the following signals of 8085 microprocessor  
 (i) HLDA (ii) S<sub>0</sub>,S<sub>1</sub> (iii)  $\overline{IO/\overline{M}}$  (iv) INTR. Also state whether the P<sub>in</sub> is a input Pin or output Pin. (4)  
 (c) What do you mean by PSW? State the application of PSW in programming. (3)  
 (d) Write a subroutine to clear PSW. (3)  
 (e) Interface two input ports at addresses FFF0<sub>H</sub> and FFF1<sub>H</sub> and two output ports at addresses 9000<sub>H</sub> and 9001<sub>H</sub> using memory mapped I/O. (3)  
 (f) Give the status word format for 8255, when its Port A and Port B are in mode-1 operation and Port A act as Output Port, while Port B act as input Port. (3)  
 (g) What do you mean by maximum mode of 8086? (3)  
 (h) Explain the function of byte enable Pins ( $\overline{BE}_0$  to  $\overline{BE}_3$ ) and  $\overline{BS}_{16}$  Pin of 80386 Microprocessor. (3)

- Q2 (a) Give the Pin diagram of 8086 Microprocessor and explain pipelining and Memory Segmentation. (6.5)  
 (b) With neat Timing diagram explain memory read cycle and memory write cycle. (6)

**OR**

- (a) Discuss the register organization of 80386 Microprocessor. (6.5)  
 (b) Explain the descriptor table of 80386 Microprocessor. (6)

- Q3 (a) Explain the control word format for 8251. Specify mode word, command word and status word to transmit data with the following specifications:- (8)  
 (i) T<sub>X</sub>C is 153.6KHz (ii) Asyn 9600 baud rate  
 (iii) Character length 5 bits (iv) Two stop bits and no parity check  
 (b) Explain fully nested mode operation of 8259. (4.5)

**OR**

- (a) Give the register organization of 8257 and discuss their use in programming 8257. (8.5)  
 (b) Discuss the use of BSR mode in 8255. Give the control word format to set PC<sub>4</sub> and reset PC<sub>6</sub>. (4)

- Q4 (a) Explain the use of RIM and SIM instructions. (6.5)  
 (b) Distinguish between:- (6)  
 (i) Vectored and non vectored interrupt  
 (ii) Maskable and non maskable interrupt  
 (iii) Software and hardware interrupts

**Or**

- (a) Explain the concept of stack memory. How to initialize the stack in 8085 microprocessor. (4.5)

**P.T.O.**

(b) Calculate the time delay produced by following delay program:- (4)

Main Program	No. of T-states
IN port A	10T
MOV D, A	4T
CALL DELAY	18T
MOV A, D	4T
OUT PORT B	10T
HLT	6T

The subroutine	DELAY is	
DELAY	MVI B, 4A <sub>H</sub>	07T
	MVI C, 0F <sub>H</sub>	07T
LOOP-1	INR C	04T
	MOV A, B	04T
	SUB C	04T
	JNZ 'LOOP 1'	7/10T
	RET	01T

(c) What is PSW and state its use? (4)

Q5 (a) List the status signal in 8085. Explain their function. (4.5)

(b) Explain with schematic diagram how separate address and data signal can be generated from 8085 common address-data lines. (4)

(c) Explain the function of (i) HLDA (ii) RESET OUT (iii) SOD (iv) S<sub>0</sub> Pin of 8085 Microprocessor. (4)

OR

(a) What are RAMs and ROMs? Why should both of these be used in an 8085 Microprocessor system? (4.5)

(b) List the control signals of 8085 Microprocessor and explain their function. (4)

(c) How does Microprocessor differentiate between data and Instruction? (4)

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