QUESTION PAPER CODE- 54018

University Institute of Engineering & Technology

(Recognised Under Section 2(f) and 12B of UGC)

Kurukshetra University, Kurukshetra

Roll No. -

THEORY EXAMINATION – MAY 2019	
B.TECH -ECE	SEMESTER – IV

TIME – 3 Hrs.

M.M. -

PAPER-CSE-208

SUBJECT– MICROPROCESSOR & INTERFACING

Note: All questions in Part-A and Part-B are compulsory. Attempt any four questions from Part-C selecting at least one from each unit.

PART-A (15 Marks)

Q. No. – 1 Answer the following questions. **15x1=15**

(i)	What will be the outcome, in execution of instructions LXI H, 2400H and LHLD 3400 H?
(ii)	List all the interrupt signals of 8085 microprocessor.
(iii)	What is stack? Explain the use and operation of stack and stack pointer?
(iv)	Explain the instructions (i) LEA (ii) CMP (iii) TEST (iv) AAA
(v)	State the function of SID and SOD pins in 8085.
(vi)	What is the function of ALE and how does it function?
(vii)	What is an Interrupt? How the interrupts are classified?
(viii)	If the memory chip size is 2048 x 8 bits how many chips are required to make up 8 KB memory?
(ix)	What are the different types of ADC?
(x)	How clock signal is generated in 8086? What is the maximum internal clock frequency of 8086?
(xi)	Explain the concept of memory segmentation in 8086 microprocessor?
(xii)	What is queue? How queue is implemented in 8086?
(xiii)	In 8086 processor the code segment contains 4000H and instruction pointer contains 9F20H. Find the memory location addressed by the processor.
(xiv)	Define the concept dividing memory into banks?
(xv)	Calculate address of ISR when an interrupt type INT 72h is encountered by the 8086 processor .

PART-B (20 Marks)

	UNIT-I	
2	Briefly explain the instructions given below specifying there Addressing modes and show the status of PSW after each execution 1) INR M 2) DAS 3) JM , 8 bit address 4) PUSH D 5) IN , 8- Bit Port address	5
	UNIT-II	
3	Draw and discuss the read cycle timing diagram of 8086 in maximum mode?	5
	UNIT-III	
4	Generate the HEX codes for the following instructions and also specify the addressing mode for the following instructions: i. Mov Ax, [4560] ii. Mov Cx, [DI+SP+3000]	5
	UNIT-IV	
5	Write down the steps done by the 8086 processor to handle the interrupt type 10h encountered by it? Explain the functioning of 8259 PIC with the help of a block diagram.	5

PART-C (40 Marks)

	UNIT-I	
6	Explain the architecture of 8085 with the help of its internal block schematic? Draw the PSW format of 8085 microprocessor and explain each bit with an example?	10
7	Design the fully decoded scheme for 64k x8 to interface chips of 8k x 8. Show all the control signals interfacing. Discuss loading considerations?	10
	UNIT-II	
8	Draw the relevant pin diagram for 8086 Microprocessor used in both the working modes and explain function of each pin in detail?	10
9	Draw the Internal architecture of 8086 microprocessor&explain the concept of memory banks in 8086 microprocessor?	10
	UNIT-III	
10	(a) Write an assembly language program for 8086 to sort the array of elements in ascending order. (b) Write an ALP in 8086 to add two 16-digit packed BCD numbers?	10
11	Calculate the memory address the following instructions will access If DS = 4000H, [BX] = 0100H, and [SI] = 6000H, [BP] = 1000H and [DI] = 2100H. Also explain the addressing modes that are used by each instruction. a. MOV CX, [2341H] b. MOV AX, [9876H] c. MOV DX, [BX] d. MOV DX, [BP+DI] e. MOV DX, [BX + SI + 3000H] f. MOV DX, [BP + DI + 78H] g. MOV AX, 4321H h. MOV AX, BX	10
	UNIT-IV	
12	Interface a stepper motor to the 8086 microprocessor system and write an 8086 assembly language program to control the stepper motor.	10
13	Interface a typical 12-bit DAC with 8255 and write a program to generate a triangular waveform of period 10 ms. The CPU runs at 6 MHz clock frequency.	10