Enrolment No.\_\_\_\_\_

Date: 01/06/2017

**Total Marks: 70** 

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-IV (NEW) - EXAMINATION - SUMMER 2017** 

Subject Code: 2141001

Subject Name: Microprocessor and Interfacing

Time: 10:30 AM to 01:00 PM

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Attempt the following.

(MSB).

- 1 Justify 8085 is 8 bit Microprocessor.
- 2 Which Interrupt is non-maskable in 8085 Microprocessor?
- 3 ADI 04h is example of which addressing mode in 8085 Microprocessor?
- 4 Stack memory of 8085 Microprocessor operates with which mechanism? (a) LIFO (b) LILO (c) FILO (d) FIFO
- 5 What will be operating frequency of 8085 Microprocessor if 8 MHz crystal in connected to 8085 Microprocessor?
- 6 How many t-state required to execute STA 4000h?
- 7 Enlist various machine cycles of 8085.
- 8 How many address lines are available in 8086 Microprocessor?
- **9** Explain the function of Program Counter?
- 10 What will be the content of Accumulator after execution XRA A?
- 11 What will be the content of PC on reset in 8085 Microprocessor?
- **12** Explain the function of EI instruction.
- 13 Explain the function of READY pin in 8085 Microprocessor.
- 14 Explain the function of HOLD pin in 8085 Microprocessor.

Q.2	(a)	Explain following instruction with example.	03
-		LHLD DAD RLC	
	<b>(b</b> )	Give the Comparison of RISC and CISC Microprocessor.	04
	(c)	Draw and Explain the internal architecture of 8085 Microprocessor.	07
		OR	
	(c)	Draw and Explain De-multiplexing of Multiplexed Address/Data bus and	07
		control signal generation in 8085 Microprocessor.	
0.3	(a)	Design and Interface an Input port in such a way that it address becomes 83H	03
-		with 8085 Microprocessor.	
	<b>(b)</b>	Explain the interrupt types and priorities in 8085 with necessary diagram.	04
	(c)	Write an assembly language program with flow chart for 8085 microprocessor	07
		to find the square of the given eight bit data stored at memory location 20150h	
		and store the sixteen bit result at memory location 7000h (LSB) and 7001h	

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Q.3	<b>(a)</b>	Design and Interface 4 Kbyte EEPROM with starting address 4000H with 8085 Microprocessor.	03
	(b)	List the sequences take place by 8085 when interrupt is occurred.	04
	(c)	Assume fifty bytes of data stored from memory location 2050h onwards. Write an assembly language program with flow chart for 8085 microprocessor to separate all positive numbers and store them in memory locations starting from 4100h onwards.	07
Q.4	(a)	Write a subroutine for 1 ms (millisecond) delay having system clock of 1 MHz.	03
	<b>(b</b> )	Draw timing diagram for following instruction. (Assume content of DE pair is 4051h). 2050h STAX D	04
	(c)	Explain Programmable Interval Timer 8254 with Block Diagram.	07
		OR	
Q.4	<b>(a)</b>	Explain PUSH and POP Instruction with example.	03
	<b>(b</b> )	Draw timing diagram for following instruction. (Assume Content of Accumulator is FFh)7079hOUT59h	04
	(c)	Explain Programmable Interrupt Controller 8259A with Block Diagram.	07
0.5	<b>(a)</b>	Explain various control word of Programmable Peripheral Interface 8255.	03
2.0	(b)	Draw internal architecture of 80186 and its advance functions with block diagram.	04
	(c)	Define the term addressing mode and explain various addressing modes of 8086 Microprocessor with suitable example.	07
		OR	
Q.5	<b>(a)</b>	With necessary diagram explain how physical address is generated from the values of segment register (CS) and instruction pointer (IP)?	03
	(b)	Draw internal architecture of 80286 and its advance functions with block diagram.	04
	(c)	Write working principle of 8086 Microprocessor and explain internal architecture of 8086 Microprocessor with block diagram.	07

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