

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- IV EXAMINATION – SUMMER 2020

Subject Code: 2141001

Date: 26/10/2020

Subject Name: MICROPROCESSOR AND INTERFACING

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

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

		MARKS
Q.1	(a) Define: i) Instruction cycle ii) Machine cycle	03
	(b) What are the control signals? How are they generated?	04
	(c) Draw and Explain the internal block diagram of 8085 microprocessor.	07
Q.2	(a) Explain DAD and DAA instruction with example.	03
	(b) Explain Programming Model of 8085.	04
	(c) Six bytes of data is stored in the memory locations from 3055h to 305Ah. Transfer the data to the locations 3080h to 3085h in the reverse order.	07
	OR	
	(c) Ten bytes of data are stored in memory location between 2050H to 2059H. Transfer the block of data to new memory location starting at 2070h.	07
Q.3	(a) Explain the following instructions with example. (1) LDA 2050h (2) XRI 40h (3) STAX B	03
	(b) Write a short note on flags in 8085 register.	04
	(c) Design a memory system that contains 2K byte of EPROM, immediately followed by 1K byte of RWM. The EPROM starts at address 0000H and it is implemented by using 1Kbyte of EPROM. The RWM is implemented using 1Kbyte RAM chips. Use decoder and gates (if required) for the interfacing circuit.	07
	OR	
Q.3	(a) Discuss in detail and compare memory mapped I/O and I/O mapped I/O.	03
	(b) Draw and explain the timing diagram of memory write machine cycle.	04
	(c) Define addressing modes? Explain the various addressing modes supported by 8085 microprocessor with example.	07
Q.4	(a) Explain following pins of 8085. i) ALE ii) INTR iii) HOLD	03
	(b) Explain RIM instruction.	04
	(c) Write a program to generate a square wave with period of 400μs. Use bit D0 to output the square wave. Assume the clock frequency 2MHz.	07
	OR	
Q.4	(a) What is conditional and unconditional branching? Illustrate the answer with an example.	03
	(b) What is an interrupt? What are the interrupts available in 8085 microprocessor? Write interrupt vector table for vectored interrupts.	04
	(c) Write a program to count continuously in Hexadecimal from FFh to 00H in a system with a 0.5μs Clock period. Use register C to set up a one	07

millisecond delay between each count and display the numbers at output port 56h.

- Q.5** (a) List out features of 8086 microprocessor. **03**
(b) Explain the mode-I input mode operation of 8255 in detail. **04**
(c) Draw and explain logic block diagram of 8279 (Programmable Keyboard/Display IC). **07**

OR

- Q.5** (a) Differentiate between 8085 and 8086 microprocessor. **03**
(b) Explain the application of 8255. **04**
(c) Draw and explain block diagram of Programmable Interrupt Controller 8259. **07**

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