

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- IV (New) EXAMINATION – WINTER 2019
Subject Code: 2140304
Date: 10/12/2019
Subject Name: Microprocessor & its 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) Compare assembly level language with machine level language and high-level language.	03
	(b) Explain program counter and stack pointer.	04
	(c) Write a short note on Memory Classification of 8085 Microprocessor.	07
Q.2	(a) Draw the format for flag register in 8085 microprocessor.	03
	(b) Explain RIM and SIM Instructions.	04
	(c) Define T-state, machine cycle and instruction cycle. Draw the timing diagram for the instruction IN AA h.	07
	OR	
	(c) Draw the internal architectural block diagram of 8085 microprocessor and explain each block and working of 8085 in detail.	07
Q.3	(a) Explain PUSH and POP instructions in detail.	03
	(b) Explain how address/data lines AD0-AD7 are de-multiplexed in 8085.	04
	(c) Explain the different addressing Modes of 8085 with examples.	07
	OR	
Q.3	(a) Enlist different types of interrupts available in 8085.	03
	(b) Write a program for BCD to 7-Segment LED conversion.	04
	(c) Draw and explain Interfacing of 4 x 4 Matrix keyboard with 8085.	07
Q.4	(a) Write instructions to load 16 bit number 1234H in register pair HL using LXI and MVI opcodes, and explain the difference between the two instructions.	03
	(b) Assume Register B holds 90H and the accumulator holds 09H. Illustrate the result of ORA B, XRA B, and CMA.	04
	(c) Explain the following instructions:	07
	1. RAR	
	2. DCR A	
	3. XCHG	
	4. DAD H	
	5. SUI 01H	
	6. IN AAh	
	7. JNC 2020h	
	OR	
Q.4	(a) Specify the contents of accumulator and flag CY when the following instructions are executed. MVI A, C5H ORA A RAL RRC	03



- (b) Register BC contain 1213H and Registers DE contain 2121H. Write instructions to add these two 16-bit nos., and place the sum in memory locations 1050H and 1051H. **04**
- (c) Write a program to generate a rectangular wave with a 200μsec on-period and a 400μsec off-period. (Use 8085 microprocessor) **07**
- Q.5** (a) Explain functions of 8255A based on modes. **03**
- (b) Explain any two working modes of IC 8254-Programmable interval timer. **04**
- (c) Write a short note on Programmable Interrupt Controller 8259A. **07**
- OR**
- Q.5** (a) Enlist different types of ADC and DAC. **03**
- (b) Explain Serial Communication Protocols (RS-232). **04**
- (c) Explain Transmit serial message using 8251. **07**
