

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020

Subject Code:3141710**Date:19/02/2021****Subject Name:Microprocessor and Interfacing****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Distinguish between assembly language and high level languages	03
	(b) Explain functioning of following pins of 8085. (i) HOLD (ii) INTR (iii) READY (iv) ALE	04
	(c) What do we mean by Addressing Modes? Explain, giving suitable example, all the addressing modes supported by 8085.	07
Q.2	(a) Draw circuit diagram to generate memory and I/O read write control signal by 8085.	03
	(b) Explain the operation of 8085 pin signals: AD0-AD7, HOLD and S0 & S1	04
	(c) Draw and Explain the functional block diagram of internal architecture of 8085 and explain its working.	07
Q.3	(a) Explain following instructions of 8085. (i) LDA (ii) RAL (iii) DAA	03
	(b) What is stack and stack pointer? Explain working of PUSH and POP instructions with suitable example	04
	(c) Draw and explain timing diagram of instruction MOV C,A stored in location 2005H, and its opcode is 4F H.	07
Q.4	(a) Compare absolute decoding v/s partial decoding.	03
	(b) Data block of ten data bytes is stored in memory starting from locations 2000H. Write a program to count even numbers in this data block. Store the result in memory location 3000H.	04
	(c) Design an Interfacing circuit to connect 4k×8 EPROM with starting address from 0000H and 2k×8 RAM starting address 2000H onwards. Write address range for both the memory chips showing address decoding logic.	07
Q.5	(a) Define vector interrupt. List of total vector interrupts of 8085.	03
	(b) Write the steps of responding to interrupt by 8085 microprocessor in detail.	04
	(c) Explain the function of RIM and SIM instructions in 8085 with description of each bit.	07
Q.6	(a) Write the differences between software interrupts and hardware interrupts.	03
	(b) What is key bouncing? How can we remove key bouncing problem using hardware method?	04
	(c) Draw the diagram to interface 4X4 matrix keyboard with 8085 using 8255A and write an assembly language program to find out which key is pressed.	07
Q.7	(a) Write an Assembly Language Program to generate square wave using 8255.	03
	(b) Write an assembly language program to convert BCD number into its equivalent hexadecimal number and store it at memory location 3000H.	04

- (c) Draw and explain the functional block of IC 8255A and also discuss the operating modes and control word format of 8255A. **07**
- Q.8** (a) Define Interrupt Service Routine, also mention vector addresses of TRAP, RST7.5, RST6.5, RST5.5 interrupts **03**
- (b) Assume that a seven segment display is connected to 8085 through port A of 8255A, write an assembly language program to display numbers from 1 to 9 on seven segment display at some particular delay. **04**
- (c) Explain with block diagram the 8253 timer chip and its operation **07**

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