Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2019

Subject Code: 2152006 **Date: 03/06/2019**

Subject Name: Basics of Micro Computer Systems

Time: 02:30 PM TO 05:00 PM **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Give the bit pattern of TCON register for the microcontroller 8051. Also give significance of each bit.	**03**
	(b)	For the microcontroller 8051, Give the bit format of PSW. .register and explain significance of each bit.	**04**
	(c)	Explain difference between microprocessor and microcontroller.	**07**
Q.2	**(a)**	Draw and explain block diagram of traditional computer.	**03**
	(b)	For the microprocessor 8085, state T-Sates for the following instruction (a)MVI B,09H (b)ADI 09H (c)MVI M,09H (d) MVI C,09H	**04**
	(c)	Explain IE register in the microcontroller 8051.	**07**
		OR	
	(c)	Explain Hardware Interrupt structure in 8085 microprocessor.	**07**
Q.3	**(a)**	Explain following terms: (a) SWAP A. (b) RLC A.	**03**
	(b)	Define and explain op-code and operand.	**04**
	(c)	What is Logical operation? Explain any six instruction of Logical operation in 8085.	**07**
		OR	
Q.3	**(a)**	Explain structure of port 0 in the microcontroller 8051 using suitable diagrams.	**03**
	(b)	What is jump range? For the microcontroller 8051, explain absolute, long absolute and relative jump using instruction.	**04**
	(c)	Explain about Pin out of 8051.	**07**
Q.4	**(a)**	An 8 bit number is stored in internal RAM location 45H. Write an ALP for the microcontroller 8051 to get one's complement of this number and store the result in internal RAM location 46H.	**03**
	(b)	List out addressing modes of 8051 and explain any two modes in detail with example.	**04**
	(c)	Using timing diagram, explain execution of the instruction STA 2050H.	**07**
		OR	
Q.4	**(a)**	Explain Time-Delay for 8051 microcontroller.	**03**
	(b)	Explain about Address bus and Data bus in 8085.	**04**
	(c)	What is Stack and Stack pointer? Explain Stack operation with use of PUSH and POP Instructions.	**07**
Q.5	**(a)**	Using suitable diagram, explain generation of control signals in the microprocessor 8085.	**03**
	(b)	Write a program to generate a delay of 500 ms at any pin of 8051.	**04**
	(c)	Program to convert 8-Bit binary number to its equivalent BCD.	**07**
		OR	

Q.5	**(a)**	Define: instruction cycle, machine cycle and T-state	**03**
	(b)	Two 8-bit BCD numbers are stored in memory locations 2020H and 2021H. Write an assembly language program for the microprocessor 8085 to add these two numbers and store the BCD answer in the memory location 2030H.	**04**
	(c)	Comparison between memory mapped I/O and I/O mapped I/O.	**07**

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