U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

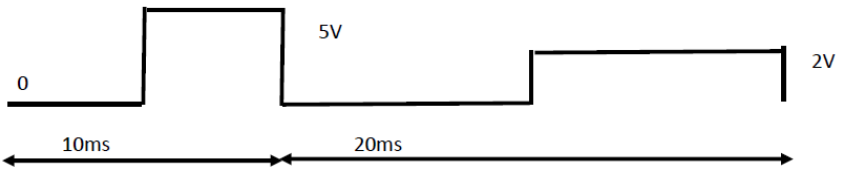
July 2023 Semester End Main Examinations

Programme: B.E. **Semester: VI**
Branch: Institutional Elective **Duration: 3 hrs.**
Course Code: 19ET6OE1MP **Max Marks: 100**
Course: Microprocessors **Date: 07.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	With an example each explain any two data transfer, any two logical and any two arithmetic instructions	*CO1*		**06**
	b)	Write a program to find first 10 Fibonacci numbers and store in addresses 2000H to 2009H	*CO2*	*PO1*	**08**
	c)	Write a Program to multiply two 16-bit numbers. Demonstrate the output with an example	*CO2*	*PO1*	**06**
		UNIT - II			
2	a)	Write a program to count number of 1s and 0s in a given byte and store the counts at any two locations	*CO2*	*PO1*	**08**
	b)	With an example explain the significance of Carry, Auxiliary Carry, Parity, Overflow, Sign and Zero Flags in 8086	*CO1*		**12**
		OR			
3	a)	Write a program to find the GCD of two numbers	*CO2*	*PO1*	**08**
	b)	Design an up-down counter with the required delay. The counter is designed to count up from 1 to 50 and 100 to 51 (BCD). The delay required between each count for the up counter is 1 second and the down counter is 2 seconds.	*CO2*	*PO3*	**12**
		UNIT - III			
4	a)	A librarian is stacking the books in a library and numbering them in a way similar to the pattern followed in 8086 Stack. If the first book placed has an address of 100H. Find the address of the twentieth book.	*CO2*	*PO2*	**08**
	b)	Explain the pin configuration of 8086 with a neat diagram	*CO1*		**08**
	c)	The status lines S4 and S3 decides the memory segment to be used. With the help of a table demonstrate the role of S4 and S3 in choosing the appropriate segment.	*CO1*		**04**

			OR			
	5	a)	Explain with a neat diagram the steps involved in servicing an interrupt in 8086	*CO1*		**08**
		b)	Write a program to demonstrate different functions of INT 21	*CO2*	*PO1*	**08**
		c)	Write a program to exchange two numbers using PUSH and POP instructions	*CO2*	*PO1*	**04**
			UNIT - IV			
	6	a)	It is required to interface two chips of 16K x 8 ROM and two chips of 32K x 8 RAM with 8086. Select the EPROM address suitably. The RAM address must start at 0000H. Show the implementation of this memory system.	*CO3*	*PO3*	**12**
		b)	With an appropriate clock and timing diagram demonstrate the Write Cycle in minimum mode	*CO1*		**08**
			UNIT -V			
	7	a)	Write a program to generate the wave shown in Fig 7a. The wave repeats 100 times  Fig 7a	*CO3*	*PO3*	**12**
		b)	Write a program to rotate stepper motor clockwise with appropriate delay	*CO3*	*PO3*	**08**

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