



10ME65

Sixth Semester B.E. Degree Examination, Jan./Feb.2021 Mechatronics and Microprocessor

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

1	a.	Define Mechatronics. Discuss advantages and disadvantages of Mechatronics sys	tem.
			(05 Marks)
	b.	Briefly explain the elements of closed loop control system	(06 Marks)
	с	Explain with the block diagram, working of the washing machine	(00 Marks)
	υ.	Explain with the block diagram, working of the washing machine.	(0) Marks)
2	я	Explain static and dynamic characteristics of sensors	(A6 Marks)
	u. h	Explain static and dynamic characteristics of sensors.	(00 Marks)
	0.	Explain the principle of franceicet sensor with example.	(06 Marks)
	Ċ.	Explain capacitive clement sensor.	(UO Marks)
2	0	Evaloin Dermonant magnet time DC mater with schematic diagram	(09 Maula)
3	a. 1	Explain Permanent magnet type DC motor with schematic diagram.	(08 Marks)
	D.	Name any four sond state switches and explain each in oriel.	(12 Marks)
4	•	With block diagram avalain data population system	(10 M l)
4	a. 1.	Final-in investing and any investing an ann mither wether that h	(10 Marks)
	b.	Explain inverting and non-inverting op-amp with a neat sketch.	(10 Marks)
_		$\frac{PART - B}{PART - B}$	
5	a.	With the help of symbol and truth table, explain AND, OR, XOR and NAND gate	es.
	1.	Convert the falletting	(08 Marks)
	D.	Convert the following: (1.54) (1.54) (1.54)	
		(1) $(154)_{10} = (\)_2 = (\)_{16}$	
		(ii) $(10001011)_2 = (___)_{16}$.	(03 Marks)
	c.	State and prove De-Morgan's theorem. Also draw the logic circuit for the same.	(09 Marks)
			(11 11 1)
6	а	With a neat sketch explain internal architecture of Intel 8085 processor	(14 Marks)
v	h.	What are the differences between microprocessors and microcontrollers?	(06 Marks)
	0.		(00 1/14/145)
7	ล	Explain different types of instruction sets of 8085 microprocessor	(12 Marks)
'	h.	What are Buses? Explain types of Buses available in 8085 microprocessor	(12 Marks) (08 Marks)
	0.	what are buses. Explain types of buses available in 6005 microprocessor.	(00 Marks)
8	0	Draw and explain the timing diagram for memory write operation	(10 Montra)
0	a. h	Draw and explain flow of instruction word and data word	(10 Marks)
	υ.	Draw and explain now of instruction word and data word.	(10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.