

21ME653

Mechatronics

Time: 3 hrs. Max. Marks: 100

		N	ote: Answer any FIVE full questions, choosing ONE full question from each mo	dulo
		24	ote. Answer any 1112 jun questions, choosing OIL jun question from each mo	anic.
ice.	18. N 0		Module-1	
k pages. will be treated as malpractice.	1		Define Mechatronics. Briefly explain Mechatronics Design Process.	(10 Marks)
nalp		b.	Explain with block diagram, the working of Antilock Breaking System (ABS) Con	
as r			OP	(10 Marks)
ated	2	a.	OR Define sensor and transducers. Write the classification of transducers.	(10 Mordes)
s. tre	2	b.	Explain with a neat, sketch (i) LVDT (ii) Proximity Switches	(10 Marks) (10 Marks)
age 11 be		v.	Explain with a heat, sketch (i) EVD1 (ii) Hoximity Switches	(10 Maiks)
nk t ), wj			Module-2	
= 50,	3	a.	Define signal conditioning. Explain Multichannel Data Acquisition System (DAQ	
42+8		h	What is 614 to Hamon Share should be 19 White being not an army of 614 to	(10 Marks)
g, 47		υ.	What is a filter? How are filters classified? Write brief note on types of filter.	(10 Marks)
ne renr en eg,			OR	
cross lines on the equations written	4	a.	Define Solenoids. Explain two types of solenoids and mention their applications.	(10 Marks)
nes on		b.	Explain the types of Brush type D.C. motors, with filed coils with neat sketch.	(10 Marks)
ss Ir				
cto cdi	E	0	Define Microprocessor. Explain with neat block diagram, the general	form of
onal d /o	5	a.	Microprocessor system.	(12 Marks)
diag r an		b.	List the difference between Microprocessor and Microcontroller.	(08 Marks)
ly draw diagonal evaluator and /or		-		(00111111111111111111111111111111111111
ly di eval			OR	
sori 1 to	6		With a neat sketch, explain 8085A Microprocessor Architecture.	(10 Marks)
npul		b.	Explain briefly the following forms of memory units:	(10 ) ( )
cting your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Ing of identification, appeal to evaluator and /or equations written eg, $42+8 = 50$ , will be			(i) ROM (ii) PROM (iii) EPROM (iv) EEPROM (v) RAM	(10 Marks)
vers,			Module-4	
ansv	7	a.	Define PLC (Programmable Logic Controller). Explain with a neat diagram wo	orking of a
your answers, compulsors of identification, appeal to			PLC.	(10 Marks)
g of		b.	Explain in detail the criteria used for selection of a PLC.	(10 Marks)
oleting aling			OR	
com	8	a.	Briefly explain the basic structure of ladder logic diagram.	(10 Marks)
kny Cny		b.	Explain the control of two pneumatic pistons, with a neat sketch.	(10 Marks)
1. 2.				
ote:			Module-5	
ž Ħ	9	a.	Explain friction guide ways and antifriction guide ways.	(10 Marks)
ortar		b.	Explain the working of hydrodynamic bearing with neat sketch.	(10 Marks)
Important Note: 1. On comple 2. Any reveal			OR	
	10	a.	Explain the different stages of mechatronic design process.	(10 Marks)
		b.	Explain with neat sketch working of automatic car park barrier.	(10 Marks)