[M19CAD1106]
I M. Tech I Semester (R19) Regular Examinations
MECHATRONICS
Department of Mechanical Engineering
MODEL QUESTION PAPER

TIME: 3Hrs.   **Max. Marks: 75 M**

Answer **ONE Question** from **EACH UNIT.**
All questions carry equal marks.
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			CO	KL	M
		UNIT-I			
1.	a).	What do y mean by Mechatronics? What are the components of Mechatronic system? Explain their role.	1	2	8
	b).	What is a Measurement System? Explain the principle and operation of Optical Encoders.	1	2	7
		OR			
2.	a).	Write the advantages and disadvantages of mechatronics system.	1	2	8
	b).	Explain the working of any one temperature measuring sensor that is used in a mechatronic system.	1	2	7
		UNIT-II			
3.	a).	What are the varis Filters that y come acro ss in Signal conditioning? Explain.	2	2	8
	b).	Explain in detail the Inverting and Non-Inverting type amplifiers.	2	2	7
		OR			
4.	a).	With the help of neat sketches Explain BJT, FET and TRIAC.	2	2	15
		UNIT-III			
5.		Differentiate among Hydraulic, Pneumatic and Electrical actuation systems.	3	2	15
		OR			
6.		Explain the working of an Electro -Hydraulic actuation system with a neat sketch.	3	2	15
		UNIT-IV			
7.		What is PLC? Briefly explain the use of timers and cnters in PLCs with suitable examples.	4	2	15
		OR			
8.	a).	Differentiate between Microprocessor and Microcontroller.	4	2	8
	b).	Draw the generalized block diagram of a Microcontroller and explain function of each component.	4	2	7
		UNIT-V			
9.		What do y understand by the terms System and Interfacing and data acquisition? Explain with suitable example.	5	2	15

		OR			
10.	a).	What y mean by ADC? Explain the working of Flash ADC with neat sketch.	5	2	8
	b).	Explain the working of R-2R Ladder DAC.	5	2	7

CO-CRSE TCOME   **KL-KNOWLEDGE LEVEL**   **M-MARKS**