

2125
B.E. (Mechanical Engineering)
Fifth Semester
MEC-505: Mechatronics

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1	<ul style="list-style-type: none"> a) How does microcontroller handle interrupts? b) How does Zener diode work? c) Write different types of cams along with their applications. d) What is Thevenin equivalent of a circuit? e) Explain LabVIEW software. 	10
Section A(Attempt any two questions)		
2	Explain the working of Bipolar transistor switch and Darlington transistor.	10
3	<ul style="list-style-type: none"> a) What are different steps for following Norton theorem? Draw the Norton equivalent circuit of the following electrical circuit. <div style="text-align: center;"> </div>	7
	<ul style="list-style-type: none"> b) What is grounding and electrical interference? 	3
4	<ul style="list-style-type: none"> a) What is ideal model for the operational amplifier? Explain Non-Inverting amplifier, instrumentation amplifier and integrator. b) What is sample and hold Circuit? 	7 3
Section B(Attempt any two questions)		
5	<ul style="list-style-type: none"> a) What is the difference between D and T Flip flops Give applications of D and T Flip flops b) What are Boolean laws? Explain XOR gate by using Boolean Algebra 	5 5
6.	<ul style="list-style-type: none"> a) Explain different methods of Digital to Analog Conversion. b) What is Quantizing theory? 	5 5
7	<ul style="list-style-type: none"> a) What is Ladder programming? Draw ladder diagram of any three types of gates. b) How does stepper motor work? 	5 5

x-x-x