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Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Control Theory and Virtual Instrumentation

Time: 3 hrs.   Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Write about open loop control system with relevant example.	10	L1	CO1
	b.	Explain with necessary details basic elements of translational mechanical systems.	10	L2	CO1
		OR			
Q.2	a.	Define control systems and write about the types of control system.	10	L1	CO1
	b.	Explain analogous systems based on force voltage analogy.	10	L2	CO1
		Module – 2			
Q.3	a.	Write about the terms related to block diagram: (i) Block diagram (ii) Block (iii) Summing point (iv) Branch point / Take away	08	L1	CO1
	b.	With relevant diagram write the rules of block diagram reduction.	12	L3	CO1
		OR			
Q.4	a.	Write about signal flow graph and Mason's gain formula with relevant details.	10	L1	CO1
	b.	With suitable diagram write the rules to solve signal flow graph.	10	L3	CO1
		Module – 3			
Q.5	a.	With neat diagram write about the architecture of VI in detail.	10	L3	CO2
	b.	With necessary details write about single ended and differential inputs.	10	L3	CO2
		OR			
Q.6	a.	With relevant details write about ADC and DAC in detail.	10	L3	CO2
	b.	With necessary details write the difference between graphical and conventional programming.	10	L3	CO2
		Module – 4			
Q.7	a.	With necessary details write about LABVIEW and advantages of LABVIEW.	10	L3	CO2
	b.	With relevant details write about SUBVI and structures.	10	L3	CO2
		OR			
Q.8	a.	With necessary details write about array and creating one dimensional and two dimensional array.	10	L3	CO2
	b.	With relevant details write about strings and string functions.	10	L3	CO2
		Module – 5			
Q.9	a.	Explain with relevant details USB and need for USB.	10	L2	CO4
	b.	Explain MODBUS protocol in detail.	10	L2	CO4
		OR			
Q.10	a.	Explain ISO-OSI model for serial bus in detail.	10	L2	CO4
	b.	Explain with relevant details RS 422 and RS 485.	10	L2	CO4

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