CONTINUOUS INTERNAL EVALUATION- 2

Dept:EC	Sem / Div:III A&B	Sub:Digital System Design	S Code:18EC34
Date:02-12-2020	Time: 2:30-4:00 pm	Max Marks: 50	Elective:N
Note: Answer any 2 full questions, choosing one full question from each part.			

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QN		Questions	Marks	RBT	COs
		PART A			
1	a	Define magnitude comparator. Design a combinational circuit that compares two 2-bit binary number and provides 3 outputs	10	L3	CO2
	b	Explain Master Slave JK flip-flop with the help of circuit diagram and waveforms	8	L2	CO1,3
	c	Explain 4-bit binary ripple counter.	7	L2	CO1,3
		OR			
2	a	Design full adder and full subtractor using 74138	8	L3	CO1
	b	Explain universal shift register.	10	L2	CO1,3
	c	Explain SR latch as a switch debouncer.	7	L2	CO1,3
		PART B			
3	a	Implement the function f(a,b,c,d)= Σm(0,1,3,4,8,9,15) using: a) 4:1 mux with a,c as select lines b) 8:1 mux with a,b,d as select lines	8	L3	CO2
	b	Design 4 to 16 decoder using 3 to 8 decoder(74138) and Realize the function: a) P=f(w,x,y,z)=Σ(1,4,8,13) b) Q=f(a,b,c,d)=Σ(2,7,13,15)	10	L2	CO1
	c	Find characteristic equation for SR flip-flop and JK flipflop with the help of function table.	7	L2	CO1,3
		OR			
4	a	Define encoder. Design 4-bit priority encoder with validity output	10	L3	CO2
	b	Explain the concept of Twisted Ring counter with neat circuit diagram	7	L2	CO1,3
	c	Explain 4-bit synchronous binary up counter.	8	L2	CO1,3