ONLINE CONTINUOUS INTERNAL EVALUATION– 3

Dept: FY	Sem / Div:II[nd] A/B/C	Sub: Basic Electronics	S Code: 18ELN24
Date:25/09/21	Time: 9:30-11:00 AM	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	Explain RC phase-shift oscillator with circuit diagram and necessary equations.	9	L2	C03
	b	Define an oscillator. Explain the Barkhausens criteria for oscillations.	8	L2	CO3
	c	Perform the following (i) Convert $(ABCD)_{16} = (\ ?\ )_2 = (\ ?\ )_8$ (ii) Subtract $(22)_{10}$-$(17)_{10}$ using 1's and 2's compliment method.	8	L3	CO4
		OR			
2	a	Explain the operation of IC-555 as an Astable oscillator with neat circuit diagram and necessary equations.	9	L3	CO3
	b	With a neat circuit diagram explain the working of Wein-bridge oscillator.	8	L2	CO3
	c	What is multiplexer ? Implement 4:1 multiplexer using basic gates.	8	L3	CO4
		PART B			
3	a	Simplify the following expressions i) Y=AB+ A'C+ AB'C (AB+C) ii) Y= AB+A(B+C)+B(B+C) iii) Y=(A+B)(A'+B)	9	L3	CO4
	b	Convert the following. i) $(867)_{10}=(\ ?\ )_2 = (\ ?\ )_{16}$ ii) $(110111101.01)_2= (\ ?\ )_{10} = (\ ?\ )_{16}$	8	L3	CO4
	c	Design full adder circuit and implement it using basic gates.	8	L3	CO4
		OR			
4	a	Draw and explain 4-bit shift register.	9	L2	CO4
	b	With a neat logic diagram and truth table, explain the working of a JK flip-flop.	8	L2	CO4
	c	Explain the basic elements of communication system with block diagram.	8	L2	CO5

Prepared by: Vinay P HOD