CONTINUOUS INTERNAL EVALUATION - 1

Dept: FY	Sem / Div: **2CS A & B**	Sub: **Introduction to Electronics and Communication**	S Code: **BESCK204C**
Date: 16.05.2024	Time: 9:30-11:00	Max Marks: 50	Elective: Y

Note: Answer any 2 full questions, choosing one full question from each part.

QN		Questions	Marks	RBT	CO's
		PART A			
1	a	What is Regulated Power Supply? With neat block diagram explain the working of DC power supply. Also mention the principal components used in each block.	8	L2	CO1
	b	What are voltage multipliers? With circuit diagram explain the operation of voltage doubler.	8	L2	CO1
	c	What is oscillator? Mention the conditions for oscillations. Explain the operation of three-stage RC Network oscillator with neat circuit diagram.	9	L2	CO1
		OR			
2	a	With a neat circuit diagram and waveforms, explain full wave bridge rectifier.	8	L2	CO1
	b	Mention the advantages of negative feedback in amplifier circuits. With relevant equations and diagram, explain the concept of negative feedback.	8	L2	CO1

	c	Explain the following operational amplifier circuits and write the output equation and/or input-output waveforms: (i) Inverting Amplifier (ii) Summing Amplifier (iii) Subtractor.	9	L2	CO1
		PART B			
3	a	What is an embedded system? Compare – (i) Embedded systems with General computing systems (ii) RISC processors with CISC processors.	8	L2	CO3
	b	What are multivibrators? Illustrate single-stage astable multivibrator/ oscillator using operational amplifier and explain the threshold voltages.	8	L2	CO1
	c	With circuit diagram, explain the operation of Wein bridge oscillator. A Wien bridge oscillator based on an operational amplifier is having $C_1 = C_2 = 100$ nF, determine the output frequencies produced by this arrangement (a) when $R_1 = R_2 = 1$ kΩ and (b) when $R_1 = R_2 = 6$ kΩ.	9	L3	CO1
		OR			
4	a	Explain the elements of a typical embedded system with a neat diagram.	8	L2	CO3
	b	Define the following operational amplifier parameters: (i) Open loop voltage gain (ii) Output resistance (iii) Closed loop voltage gain (iv) Slew rate	8	L2	CO1
	c	Draw the circuit diagram and input-output waveforms of the following operational amplifier circuits: (i) Non-Inverting Amplifier (ii) Differentiator (iii) Integrator	9	L3	CO1

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