

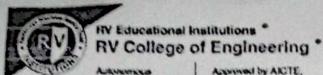
Institution Affiliated to Visvosviusya Technological University, Beingavi

negative feedback.

Approved by AICTE, New Delhi



		Academic year	2022-2023 (Odd Sem)					
		DEPA	RTMENT OF					
			mmunication Engineerin	g				
	Date 23/02/2023 Maximum Marks							
	Course Code	22ES14C	Duration	1:	60 20 Mins			
	Sem	I Semester		E2				
			CTRONICS ENGINEER					
Instr	uctions to candia		CINOMICS ENGINEER					
i	. Part A mu.	st be answered within the fir.						
1	i. Assume the	e suitable data for missing ve						
		PART-A			M 1	BT 2	CO	
1	The Slew rate of an Op-Amp is 3V/µsec with a peak value of voltage as 2V.  Calculate the maximum output frequency so that the output is not distorted.						2	
2							1	
						2	2	
3/4	Prove that $AB + BC + B\overline{C} = AB + B$						2	
5	The gain of a voltage follower is						1	
6/							3	
7								
8								
9 In a 3 variable K-map, if all the cells contain 1's then the output is							1	
_	/		PART-B					
18	Explain the op-		oscillator with a neat diagram	and also	6	2	2	
b/	Prove that the stability of the gain of an amplifier improves with negative feedback by a factor $(1+A\beta)$ where A is the open loop gain of the amplifier and $\beta$ is the feedback factor.						2	
2a	Simplify the logic expression using K map and implement the logic circuit using NAND Gate. $F = \sum_{i} m(0,1,2,3,5,7,8,9,10,12,13)$						3	
2b	List at least for	ur important characteristics or a general purpose comme	of an ideal op-amp and ind	icate their	4	1	1	
3a	Simplify the foliation $Y = $	lowing expressions: $(A + B)(A + \overline{B})(\overline{A} + B)$ $XY + XYZ + XY\overline{Z} + \overline{X}YZ$	icial op ampi		5	3	2	
b	Decign an adder	circuit using an op-amp to	obtain an output expression. V <sub>3</sub> are the inputs. Assume th	e value of	5	4	4	
1	feedback resisto	r as 10KΩ.			-			
42	Define Slew rate	and CMRR with necessary	y expressions		4	1	1	
4a b	An amplifier has	s a gain of 50 dB. The band e of $30K\Omega$ , and an output in eck of 2.9% is given to the put impedance, bandwidth	lwidth of 250KHz, distortion of mpedance of $2K\Omega$ . If the volume amplifier, calculate the part and distortion of the amp	age series		4	3	



Autoborava Productor Affiliated to Vincenseraya Technological Linivesity, françani Approved by AICTE, New Delhi

## Academic year 2022-2023 (Odd Sem)

5a	Write the truth table for SUM and CARRYOUT of a full adder. From the truth table, obtain the logic expressions for the same and then realize the full adder using 2 half adders.		3	3
5b	Draw the circuit of an inverting amplifier and explain the working of the same with suitable expressions	4	3	3

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		COI	CO2	CO3	CO4	Ll	L2	1.3	L4	L5	1.6
	Quiz	Max Marks	5	4	1		5	4	1			
Distriction	Test	Max Marks	8	15	22	5	8	6	19	17	-	