С	Reg. No. :								
	Question Pa	per Code: U4408							
B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024									
Fourth Semester									
Electronics and Communication Engineering									
21UEC408-PRINCIPLES OF LINEAR INTEGRATED CIRCUITS									
	(Regul	ations 2021)							
Dur	ation: Three hours	Maximum: 100 Marks							
Answer ALL Questions									
PART A - $(5 \times 1 = 5 \text{ Marks})$									
1.	What is the use of notch and dot in DIP I	Cs? CO1-U							
	(a) Determine the pin configuration	(b) Designed to represent device type							
	(c) Represent property of IC	(d) Find the pin number							
2.	What makes the output voltage equals to zero in practical op-amp? CO1								
	(a) Input offset voltage	(b) Output offset voltage							
	(c) Offset minimizing voltage	(d) Error voltage							
2	Civan valtage to gurrant converter with fleating lead Determine the sutput CO2 Arr								

3. Given voltage to current converter with floating load. Determine the output CO3- App current?



(a) 3mA

(b) 6mA

(c) 4mA

(d) 2mA

	(a) Free running state			(b) Capture state				
	(c) Phase locked state			(d) All of the above				
5.	How to re	How many control lines are present in analog to digital converter in addition CO1- to reference voltage?						
	(a)]	(a) Three (b) Two (c) One (d) None of the at				oove		
			PART – I	B (5 x 3= 15 Ma	rks)			
6.	What is active load? Where it is used and why?					CO1- U		
7.	A differential amplifier has a differential voltage gain of 2000 and common CO2-App mode gain of 0.2. Determine the CMRR in dB.						App	
8.	Drav 5V a	Draw the output waveform of a clamper circuit with input signal amplitude of CO4 -App 5V and reference voltage of +2V.						
9.	In an Astablemultivibrator of 555 timer, R_A =606k Ω and C=0.1 μ F. Calculate CO5-App (a) t HIGH (b) tLOW (c) free running frequency (d) duty cycle.							
10.	Wha 101	What is the output of a 6 bit ladder D/A converter when it has an input ofCO6- App 101001 ?For 1 = 10 V and 0 = 0V 0						
			PART	- C (5 x 16= 80	Marks)			
11.	(a) Design a $4K\Omega$ resistor using basic planar process.				CO2- App	(16)		
	Or							
	(b)	10	2	3	• 90 • 0 • 4	CO2- App	(16)	
		Fabricate the abo	ove circuit using	Basic planar pro	ocess.			
12.	(a)	(i) Explain the c shift of the input shift of the input(ii) Illustrate the constant current is	ircuit which pro signal and also signal. function of th in the load.	oduce the output produce the out ne current source Or	t with 180 ⁰ phase tput with 0 ⁰ phase e which provides	CO1-U	(16)	
	(b)	Explain the DC c	characteristics of	f an operational a	amplifier.	CO1-U	(16)	
13.	(a)	Design a circuit	which is used i	in industry appli	ication to amplify	CO3- App	(16)	
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4. At which state the phase-locked loop tracks any change in input frequency?

CO1- U

the low input signal.

Or

- (b) Design the circuits which produce triangular and spike waveform CO3- App (16) output for square wave input signal.
- 14. (a) Design a Monostable operation using 555 timer with its frequency CO4- App (16) of oscillation is 1 KHz.
 - Or
 - (b) Design a free running multivibrator using IC 555 with its CO4- App (16) frequency of oscillation is 1 KHz.
- 15. (a) Design a 3 bit R-2R ladder type DAC with neat diagram. CO6- App (16) Or
 (b) Design a 3 bit output Flash type ADC with neat diagram. CO6- App (16)

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