Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- IV EXAMINATION - SUMMER 2020

	Subject Code: 3141002 Date:26/10/		2020
	•	Name: Analog Circuit Design 0:30 AM TO 01:00 PM Total Marl	zg• 7 0
	uction		25. 70
		Attempt all questions.	
	2.	ı v	
	3.	Figures to the right indicate full marks.	MARKS
Λ1	(a)	List ideal characteristics of OP-AMP.	
Q.1	(a) (b)	Define following terms.	03 04
	(D)	Slew Rate, CMRR, SVRR, I/P offset voltage.	V 4
	(c)	Explain inverting differentiator circuit using OP-AMP.	07
	(C)	Explain inverting unreferration eneath using of Thirt.	07
Q.2	(a)	Derive gain expression for voltage series F/B amplifier using OP-AMP.	03
	(b)	Explain window detector using OP-AMP.	04
	(c)	Write and explain differential amplifier using two OP-AMP.	07
		OR	
	(c)	Explain Schmitt trigger circuit operation using OP-AMP.	07
Q.3	(a)	Explain circuit made up of OP-AMP that does subtraction.	03
Ų.S	(a) (b)	Explain All pass filter using OP-AMP.	03
	(c)	Explain chebyshev filter using OP-AMP with derivations.	07
	(-)	OR	
Q.3	(a)	Define following terms.	03
		Lock Range for PLL, Capture Range for PLL, Frequency Stability for	•
	(3.)	Oscillators.	0.4
	(b)	Explain class B push pull power amplifier.	04
	(c)	Draw and explain triangular wave generator using OP-AMP.	07
Q.4	(a)	Explain I to V converter using OP-AMP.	03
~··	(b)	Explain phase shift oscillator using OP-AMP in detail.	04
	(c)	Explain CE short-circuit current gain including resistive load R _L .	07
		OR	
Q.4	(a)	Explain voltage limiter circuit using OP-AMP with suitable example.	03
	(b)	Draw and explain class A power amplifier.	04
	(c)	Derive expression for trans-conductance gm in Hybrid – π model.	07
ال ہ			0.2
Q.5	(a)	Design Monstable multivibrator for $T_P = 11$ millisecond, take $C = 0.01$	03
	(b)	milliferad. Explain PLL using functional block diagram.	04
	(c)	Explain 555 A-stable multivibrator.	07
		OR	07
Q.5	(a)	Write short note on adjustable voltage regulator.	03
-	(b)	Design A-stable multivibrator using IC 555 for $Ton = 50\%$ of T, take $F= 1$	04
		KHz, $C = 0.1$ milliferad.	
	(c)	Explain Monostable multivibrator using IC 555.	07
