C.U.SHAH UNIVERSITY **Summer Examination-2016**

Subject Name: Linear Electronics

	Subject	Code: 4TE03LNE1	Branch: B.Tech (CE)				
	Semester Instructio	Date:26/04/2016	Time: 2:30 To 5:30	Marks :70			
	 (1) Use of Programmable calculator & any other electronic instrument is prohibited. (2) Instructions written on main answer book are strictly to be obeyed. 						
	(3) I	Draw neat diagrams and figures (if	necessary) at right places.				
	(4)	Assume suitable data if needed.					
0-1		Define the following terms:			(14)		
Q-1	a)	Power Amplifier.			(14)		
	b)	Thermal Runaway.					
	c)	Stability Factor.					
	d)	Cross Over Distortion.					
	e)	Oscillator.					
	f)	Q Point of transistor.					
	g)	Bias Stabilization.					
	h)	Input Offset Voltage.					
	1) i)	Barkhausen Criterion for Feedba	ok Oscillator				
	J) k)	Positive Feedback	ek Ösemator.				
	l)	CMRR.					
	-) m)	Slew Rate.					
	n)	Voltage Follower.					
Atte	mpt any f	Cour questions from Q-2 to Q-8					
Q-2		Attempt all questions			(14)		
c	(a)	Derive the expression of voltage	ge gain and current gain of	a Common Emitter	. ,		
	(b)	Transistor Amplifier Circuit Usin	ng h Parameters.				
	(D)	Explain Two-Port Devices and u	ie Hydrid Model in detail.				
Q-3		Attempt all questions			(14)		
	(a)	Write short note on Emitter Follo	ower in detail.				
	(b)	What is transistor biasing? Expla	in voltage divider biasing tec	hnique in detail.			
Q-4		Attempt all questions			(14)		
-	(a)	Explain with a neat diagram the	working of a Class C power a	mplifier.			
	(b)	Explain the operation of Class A	B power amplifier with a nea	t circuit diagram.			
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Q-5	Attempt all questions		(14)
	(a) Draw the block diagram of basic op-amp and explain the function of each bin detail		
	(b)	Derive the formula of voltage gain for op-amp inverting amplifier.	
Q-6		Attempt all questions	(14)
	(a)	Explain summing amplifier, scaling and averaging amplifier using inverting configuration.	
	(b)	Draw the circuit of Clapp Oscillator and explain it in detail.	
Q-7		Attempt all questions	(14)
•	(a)	Draw the circuit and explain working of Crystal oscillator.	
	(b)	Draw and explain Voltage Shunt Feedback Amplifier in detail.	
Q-8		Attempt all questions	(14)
•	(a)	Explain working Colpitt's Oscillator with help of circuit diagram.	
	(b)	Draw and explain Current Shunt Feedback Amplifier in detail.	

