R3952

Reg No.:_

APJ ABDUL KALAM TECHNOLOGICAL UNIVERS

THIRD SEMESTER B.TECH DEGREE EXAMINATION DECEMBI

Name:

Course Code: EC209

Course Name: ANALOG ELECTRONICS (MC)

Max. Marks: 100

Duration: 3 Hours

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		PART A						
		Answer all questions, each carries 5 marks.	Marks					
1		Elucidate about piece wise linear model of diode.	5					
2		What is meant by thermal runway?	5					
3		Why FET is called voltage controlled device.	5					
4		Write a short note on Darlington pair.	5					
5		Define Barkhausen Criterion. Differentiate between amplifiers and oscillators.	5					
6		Derive an expression to obtain the frequency of oscillation generated by	5					
		Hartley oscillator.						
7		What is the role of Voltage Controller Oscillator in PLL?	5					
8		Distinguish between lock and capture range.	5					
PART B								
	Answer any three questions, each carries 10 marks.							
9	a)	What is the need for biasing?	3					
	b)	Derive the expression for the rectification efficiency of half wave rectifier.	7					
10		Draw the h-parameter model of a CE amplifier and derive the expression for	10					
		voltage gain, current gain, input and output impedance.						
11	a)	Differentiate between E-MOSFET and D-MOSFET.	7					
	b)	What are the advantages of negative feedback?	3					
12		Explain the working of class B push pull power amplifier with relevant	10					
		diagrams.						
13	a)	Write a short note on negative clamping circuit.	3					
	b)	What is stability factor?	2					
	c)	With appropriate block diagrams, explain different feedback topologies.	5					
		PART C	- State and State of Concession of State					
		Answer any two questions, each carries 15 marks.						

14 a) Draw the circuit diagram of a RC phase shift oscillator and derive the 10 expression for the frequency of oscillation.

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E.	b)	Draw the circuit diagram of Colpitts oscillator and explain how a oscillation is	5
1	26 S	obtained	
15	a)	With a neat circuit diagram and waveform explain the working of an astable	10
		multivibrator using BJT.	
	b)	Give a brief description about the construction and equivalent circuit	5
		ofUnijunction transistor.	
16	a)	Write in detail about the working of a monostable multivibrator using 555 timer	10
		with necessary diagram.	
	b)	Classify various types of oscillators.	5
17	a)	With a neat block diagram explain the concept of SMPS.	6
	b)	How PLL work as a frequency multiplier.	6
	c)	Write a short note on online UPS.	3
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