Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: EC209

Course Name: ANALOG ELECTRONICS (MC)

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 5marks. Marks

1		Derive an expression to obtain the rectification efficiency of half wave rectifier.	(5)
2		What is meant by thermal runway?	(5)
3		List the properties of negative feedback.	(5)
4		Write a short note on Darlington pair.	(5)
5	(a)	Classify different types of oscillators?	(5)
	(b)	Differentiate between amplifiers and oscillators.	
6		Elucidate the working of bistable multivibrator using BJT.	(5)
7		Give a brief idea about the role of voltage controlled oscillators in PLL.	(5)
8		With a neat circuit diagram explain the working of UJT oscillator.	(5)

PART B

Answer any three questions, each carries10 marks.

9	a)	With a neat sketch explain the working of positive unbiased slicer.	(5)
	b)	Derive the ripple factor of half wave rectifier.	(5)
10		Draw the h-parameter model of a CE amplifier and derive the expression for voltage gain, current gain, input and output impedance.	(10)
11	a)	What are the different techniques used for biasing JFET?	(2)
	b)	Why FET is called voltage controlled device?	(4)
	c)	Draw & explain the drain and transfer characteristics of JFET.	(4)
12		Explain the working of class B push pull power amplifier with a neat circuit diagram.	(10)
13	a)	Derive an expression to obtain the stability factor of BJT.	(7)
	b)	Explain the pieces wise linear model of diode.	(3)

PART C

Answer any two questions, each carries 15 marks.

14	a)	With relevant circuit diagram and wave form explain the working of monostable multivibrator using IC555 timer.	(10)
	b)	How can we obtain a frequency multiplier using PLL?	(5)

15	a)	Draw the functional diagram of 555 timers IC. Explain astable mode of operation.	(10)
	b)	Give a brief idea about SMPS.	(5)
16	a)	Derive the frequency oscillation of RC phase shift oscillator.	(10)
	b)	How can we generate an oscillation using RC phase shift oscillator?	(5)
17	a)	With circuit diagram and wave form explain the working of an astable multivibrator using BJT.	(8)
	b)	Draw the circuit diagram and explain working of Hartley oscillator.	(7)

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