

Reg No.: _____

Name: _____



APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: EC209

Course Name: ANALOG ELECTRONICS (MC)

Max. Marks: 100

Duration: 3 Hours

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 runaway?	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 Hartley oscillator.	5
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 voltage gain, current gain, input and output impedance.	10
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 diagrams.	10
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

Answer any two questions, each carries 15 marks.

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

- b) Draw the circuit diagram of Colpitts oscillator and explain how a oscillation is obtained 5
- 15 a) With a neat circuit diagram and waveform explain the working of an astable multivibrator using BJT. 10
- b) Give a brief description about the construction and equivalent circuit of Unijunction transistor. 5
- 16 a) Write in detail about the working of a monostable multivibrator using 555 timer with necessary diagram. 10
- 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
