Reg No.:_____　　　　　　　　　　Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Third Semester B.Tech Degree (S,FE) Examination December 2022 (2015 scheme)

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 piecewise linear model of a diode.	(5)
2	Define an expression to obtain stability factor of BJT.	(5)
3	Explain any one of feedback topologies with a diagram	
4	Give note on harmonic distortion in power amplifiers.	(5)
5	Classify oscillators with suitable examples.	(5)
6	Explain working of astable multivibrator using 555 timer IC	(5)
7	Describe offline UPS with a diagram.	(5)
8	Derive an equation for frequency of oscillation of Colpitts oscillator.	(5)

PART B

Answer any three questions, each carries 10 marks.

9	a)	Explain the working of any one of the clamping circuits with diagrams.	(5)
	b)	Derive ripple factor of half wave rectifier.	(5)
10	a)	Write a short note on frequency response of amplifiers.	(5)
	b)	With diagrams , mention steps to obtain an AC equivalent circuit.	(5)
11	a)	Describe the construction of FET with a diagram.	(5)
	b)	Explain the concept of negative feedback.	(5)
12	a)	Elucidate cascode amplifiers	(5)
	b)	Derive the efficiency of class A amplifiers.	(5)
13	a)	Explain the role of capacitors in amplifiers	(5)
	b)	Write a short note on any two rectifier filters with diagrams.	(5)

PART C

Answer any two questions, each carries 15 marks.

14	a)	Discuss the working of bistable multivibrator using transistors.	(9)
	b)	Give note on VCO.	(6)
15	a)	Discuss in detail about lock in range and capture range .	(5)

	b)	Explain working of monostable multivibrator using 555 timer IC.	(5)
	c)	Derive the equation of frequency of oscillation of Hartley oscillator.	(5)
16	a)	Explain the principle of PLL in detail.	(5)
	b)	Illustrate the construction and characteristics of UJT.	(10)
17		Explain RC phase shift oscillator using BJT and derive the frequency of operation	(15)

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