Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Third semester B.Tech examinations (S) September 2020

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	Give a brief idea about the load line concept in BJT.	(5)
3	Explain the operation of JFET with a neat sketch.	(5)
4	With a neat sketch, explain Darlington pair of transistors.	(5)
5	Describe the classification of oscillators with examples.	(5)
6	Derive the frequency of oscillation of Colpitts oscillator.	(5)
7	With a neat block diagram explain the working of SMPS circuit.	(5)
8	Explain the operation of Phase Locked Loop.	(5)

PART B
Answer any three questions, each carries 10 marks.

9 a) Explain how Zener diode acts as a voltage regulator.   (5)

   b) Draw the circuit diagrams and corresponding waveforms of a positive clipper   (5)
      with positive bias and positive clipper with negative bias.

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 Explain the working of a common source amplifier with a neat sketch.   (10)

12 Elaborate the operation of class A power amplifier and derive its efficiency.   (10)

13 Explain E-MOSFET and D-MOSFET with relevant diagrams.   (10)

PART C
Answer any two questions, each carries 15 marks.

14 Explain RC phase shift oscillator using BJT and derive its frequency of   (15)
    oscillation.

15 a) Explain the operation of astable mode of operation of multivibrators using BJT   (10)
      with a neat sketch.

    b) Derive an equation for frequency of oscillation of Hartley oscillator.   (5)

16 a) Draw the internal circuitry of IC555 in monostable mode and explain its working. (10)

   b) Explain any one application of PLL. (5)

17 a) Explain the construction and characteristics of UJT. (10)

   b) Illustrate about online UPS and offline UPS. (5)

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