Code No: R1622041 **R16** SET - 1

II B. Tech II Semester Supplementary Examinations, April - 2021
ELECTRONIC CIRCUIT ANALYSIS
(Com to ECE, EIE)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	What is hybrid ∏ model. Explain it?	(3M)
	b)	Write short notes on darling ton pair amplifier?	(2M)
	c)	Show that band width decreases with cascading.	(2M)
	d)	Explain the significance of the gain bandwidth product	(3M)
	e)	Explain why LC oscillators are not used at low frequencies	(2M)
	f)	Explain the limitations of RC phase shift oscillator.	(2M)

PART -B

2.	a)	Draw the CS FET amplifier at HF	(4M)
	b)	Derive for the Current Gain of hybrid – π model of CE amplifier with Resistance Load.	(10M)
3.	a)	Derive expressions for overall voltage gain and overall current gain of a two-stage RC coupled amplifier.	(7M)
	b)	List out the special features of Darlington pair and cascode amplifiers.	(7M)
4.	a)	Derive the expression for voltage gain, input resistance, output resistance of the current shunt feedback amplifier?	(7M)
	b)	An amplifier has a voltage gain of 600, f1=200Hz, f2=400Khz and a distortion of 20% without feedback. Determine the amplifier voltage gain and Df when a negative feedback is applied with feedback ratio of 0.01?	(7M)
5.	a)	Derive the expression for frequency of oscillation and condition for sustained oscillation of a Hartley oscillator.	(10M)
	b)	Draw the crystal oscillator and explain about piezoelectric effect.	(4M)
6.	a)	A single transistor is operating as an ideal class B amplifier with a 10-K load. A dc meter in the collector circuit reads 8mA. How much signal power is delivered to the load?	(4M)
	b)	Explain the operation of a class B push-pull power amplifier and derive its conversion efficiency and also list out its advantages and disadvantages	(10M)
7.	a)	Draw the circuit diagram of a double tuned amplifier and derive the expression for 3 db band width?	(7M)
	b)	Describe the heat sinks for tuned power amplifiers?	(7M)
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