



B.Tech III Semester Supplementary Examinations, February 2024

ELECTRONIC CIRCUITS
(EEE)

Maximum Marks: 70

Date: 21.02.2024

Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		CO	BTL
1	Draw a small signal low frequency model of a transistor.	CO1	
2	What are the characteristics and applications of CC amplifier?	CO1	
3	Draw the four feedback topologies?	CO2	
4	What is Barkhausen Criteria?	CO2	
5	What is crossover distortion in CLASS B amplifier?	CO3	
6	Compare Complementary symmetry and Pushpull amplifier	CO3	
7	Obtain the response of RC low pass filter for step input?	CO4	
8	Compare positive and negative clamper	CO4	
9	Define the switching times- rise time, storage time and fall time of a transistor?	CO5	
10	Classify Multivibrators.	CO5	

Part-B

Answer All the following questions. (5X10M=50Marks)		M	CO	BTL
11	Write the analysis of a CE amplifier circuit using h parameters. Derive the expressions for current and voltage gain, input impedance and output admittance	10M	CO1	
	OR			
12	What is non-linear distortion? List the causes for this type of distortion in amplifiers.	10M	CO1	
13	Derive the expression for frequency and condition of oscillation RC phase shift oscillators.	10M	CO2	
	OR			
14	Derive the expression for the input resistance with feedback R_{if} and output resistance with feedback R_{of} in the case of Current shunt feedback amplifier	10M	CO2	
15	a) Derive the expression for the frequency of Hartley oscillators. b) A Hartley oscillator is designed with $L = 20\mu H$ and a variable capacitance. Find the Range of capacitance values if the frequency of oscillation is varied between 950 KHz to 2050 KHz .	5M 5M	CO3	
	OR			

16	Explain about heat sinks. Explain the term Thermal Resistance. Give the sketches of heat sinks.	10M	CO3	
17	A. What do you mean by double Ended Clipping? With the help of a neat circuit diagram, explain the working of a two-level diode clipper. B. State and Prove Clamping Circuit Theorem	5M 5M	CO4	
	OR			
18	What is the response of step input to a high pass RC circuit? Explain in detail	10M	CO4	
19	Explain the operation of Astable multi vibrator? Derive expression for frequency of oscillations?	10M	CO5	
	OR			
20	Explain the operation of Schmitt Trigger with neat circuit diagram and waveforms and List the applications of Schmitt Trigger	10M	CO5	