R20 Regulation *Subject code: 3P3DC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech III Semester Supplementary Examinations, December 2025

ELECTRONIC CIRCUIT ANALYSIS

(ECE)

Maximum Marks: 70 Date: 30.12.2025 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.
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)		Marks	CO	BTL
1	Define various hybrid parameters.	2M	1	L1
2	Two stages of amplifier are connected in cascade. If the first stage has a decibel gain of 40 and second stage has an absolute gain of 20 then what is the overall gain in decibels.	2M	1	L1
3	Define the gain.	2M	2	L1
4	Define various regions of MOSFET characteristic curve.	2M	2	L1
5	Compare different MOS amplifiers.	2M	3	L1
6	Define Oscillator.	2M	3	L1
7	Define sensitivity.	2M	4	L1
8	List the advantages of complementary-symmetry configuration over push pull configuration.	2M	4	L1
9	What are the drawbacks of transformer coupled power amplifiers?	2M	5	L1
10	List out configurations of tuned amplifiers.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Discuss the effect of coupling and bypass capacitors on the frequency response of the CE amplifier.	10M	1	L2
	OR			
12	Analyze the CC amplifier and derive the input and output resistance.	10M	1	L2
13	Write short note on: Hybrid -Pi model for a transistor in CE configuration.	10M	2	L2
	OR			
14	Prove that (i) hfe=gm* rb'e for a Hybrid -π model of CE amplifier.	10M	2	L2
15	Draw the small signal high frequency equivalent circuit for the source follower and find its voltage gain input and output impedances.	10M	3	L2
	OR			
16	Draw the low frequency model of common gate FET amplifier and calculate its parameters.	10M	3	L2

17	What are the different mixing techniques used in any feedback system? Explain.	10M	4	L2
	OR			
18	Differentiate between RC and LC type oscillators.	10M	4	L2
19	What is class B amplifier? Why is it employed? Give its circuits, design equations, characteristics & limitations.	10M	5	L2
	OR			
20	How the frequency response of doubled tuned amplifier depends on degree of coupling between two tank circuits?	10M	5	L2