R18 Regulation *Subject code:2P3DC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, June 2026

ANALOG ELECTRONIC CIRCUIT ANALIYSIS

(ECE)

Maximum Marks: 70 Date: 16.06.2026 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	State Miller's theorem.	2M	1	L1
2	What is bandwidth of an amplifier?	2M	1	L1
3	Define dB.	2M	2	L1
4	Define an Amplifier.	2M	2	L1
5	Draw the characteristics of JFET.	2M	3	L1
6	Draw the symbol of N-channel JFET	2M	3	L1
7	List any two advantages of negative Feedback.	2M	4	L1
8	What is a Power Amplifier?	2M	4	L1
9	What is Barkhausen criterion?	2M	5	L1
10	What is a Tuned circuit?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Analyze general transistor amplifier circuit using h parameter model. Derive the expressions for A_I, A_V, R_i, R_0.	10M	1	L2
	OR			
12	Derive expressions for overall voltage gain and overall current gain of a CE Amplifier	10M	1	L2
13	Draw the high frequency equivalent circuit of a BJT and explain the same.	10M	2	L2
	OR			
14	Draw the small signal high frequency equivalent circuit for the source follower and find its voltage gain input and output impedances?	10M	2	L2
15	Derive the expression for the input resistance with feedback R_{if} and output resistance with feedback R_{Of} in the case of a) Voltage series feedback amplifier. b) Voltage shunt feedback amplifier.	5M 5M	3	L2
	OR			
16	Derive the expression for the frequency of Wein bridge oscillator.	10M	3	L2

17	Explain the Operation of Class B Push-Pull Amplifier and derive maximum Power Efficiency.	10M	4	L2
	OR			
18	Explain the operation of Class-A power amplifier and derive the expression for efficiency.	10M	4	L2
19	Draw the circuit and explain the working principle of RC phase shift oscillator.	10M	5	L2
	OR			
20	Explain single tuned Amplifier and list the advantages of tuned circuit.	10M	5	L2