R18 Regulation *Subject code: 2P3BC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, July 2024

ELECTRONIC CIRCUITS
(EEE)

Maximum Marks: 70 Date:23.07.2024 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	Bloom Tx
1	Draw a small signal low frequency model of a transistor.	1	L1
2	List out the various possibilities of inter-stage coupling of amplifiers.	1	L1
3	Draw the small signal model of JFET.	2	L1
4	What is Barkhausen criterion.	2	L1
5	What is the effect of negative feedback on amplifier gain?	3	L1
6	State the frequency for RC phase shift oscillator.	3	L1
7	What are the drawbacks of transformer coupled power amplifiers?	4	L1
8	What are the other names of Clampers?	4	L1
9	List different types of Clippers.	5	L1
10	What are the applications of Bistable Multivibrator?	5	L1

Part-B

	Answer All the following questions. (5X10M=50Marks)		
11	Write the analysis of a CE amplifier circuit using h parameters. Derive the expressions for A_I, R_I, A_V & R_O. [10M]	1	L2
	OR		
12	Discuss the effect of coupling and bypass capacitors on the frequency response of the CE amplifier. [10M]	1	L2
13	Define Miller's theorem and explain its relevance in the analysis of BJT. [10M]	2	L2
	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]	2	L2
15	a) Derive the expression for the frequency of Colpitt's Oscillators. [5M] b) In a colpitt's oscillator, C1 = 0.2μF and C2 = 0.04μF. If the frequency of oscillation is 10KHz, find the value of Inductor. Also, find the required gain for oscillation. [5M]	3	L2

	OR		
16	Give the block diagram of a general feedback amplifier. State the function of each block. [10M]	3	L2
17	Compare various types of Power Amplifiers. [10M]	4	L2
	OR		
18	What is cross over distortion? How to eliminate it? [10M]	4	L2
19	Obtain the response of RC high pass and low pass filter for a step input. [10M]	5	L2
	OR		
20	With a neat sketch explain the working of Bistable Multivibrator. [10M]	5	L2