R18 Regulation *Subject code:2P3BC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, December 2024

ELECTRONIC CIRCUITS

(Electrical and Electronics Engineering)

Maximum Marks: 70 Date:06.12.2024 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 high frequency model of CE amplifier.	2	L1
4	What is Barkhausen criterion.	2	L1
5	Define sensitivity.	3	L1
6	What is thermal runaway?	3	L1
7	Classify different types of heat sinks.	4	L1
8	What is the function of a comparator circuit?	4	L1
9	Define rise time of a transistor.	5	L1
10	What are the applications of Bistable Multivibrator?	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
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	L3
	OR		
12	Discuss the effect of coupling and bypass capacitors on the frequency response of the CE amplifier. [10M]	1	L3
13	What is non-linear distortion? List the causes for this type of distortion in amplifiers. [10M]	2	L3
	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	L3
15	Give the block diagram of a general feedback amplifier. State the function of each block. [10M]	3	L3
	OR		
16	What is the effect of a voltage series negative feedback in the following performance measures of a BJT amplifier derive the expression for: i) Input resistance ii) Output resistance [10M]	3	L3
17	Discuss the concept of Power transistor heat sinking. [10M]	4	L2
	OR		
18	What is cross over distortion? How to eliminate it? [10M]	4	L2

19	Sketch & describe the working of clipping circuits. a) Series diode positive clipper circuit b) Series diode negative clipper circuit	[10M]	5	L3
20	Explain the transistor switching times.	[10M]	5	L2