R20 Regulation *Subject code: 3P3BC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, February 2024

ANALOG ELECTRONICS

(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.
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	What are the types of distortion in amplifiers?	CO1	L1
2	What are the advantages of h-parameter model in transistors?	CO1	L1
3	Compare the negative feedback and positive feedback	CO2	L3
4	State Barkhausen criterion for oscillation	CO2	L1
5	What is thermal runaway?	CO3	L1
6	Mention the advantages of push pull power amplifiers.	CO3	L2
7	Distinguish between shunt clippers and series clippers.	CO4	L3
8	Define clamping circuit theorem.	CO4	L1
9	How transistor can be used as a switch.	CO5	L1
10	Compare astable and bistable multivibrators.	CO5	L3

Part-B

Answer All the following questions. (5X10M=50Marks)				
11	Draw the h-parameter equivalent circuit for typical common emitter amplifier and derive expression for Ai, Av,Ri and Ro.	10M	CO1	L4
	OR			
12	A. Define and explain the parameters transconductance Gm, drain resistance Rd and amplification factor of JFET.	5M	CO1	L2
	B. Compare CE,CE and CC configurations in property wise.	5M		L3
13	A. What are the advantages and disadvantages of negative feedback in Amplifiers. Explain.	5M	CO2	L2
	B. Draw the block diagram of voltage series feedback amplifier and derive the expression for Input and output resistance from .it.	5M		L3
	OR			
14	Describe the construction of RC phase shift oscillator and explain its working.	10M	CO2	L4

15	A. Explain the transformer coupled amplifier with neat diagrams. B. Compare Push Pull Class -B and Complimentary symmetry class - B power amplifiers.	5M 5M	CO3	L2 L2
	OR			
16	Show that the Transformer coupled Class -A Amplifier maximum efficiency is 50%.	10M	CO3	L3
17	A. Draw the Low pass RC circuit and explain its output response for pulse and ramp inputs. B. Draw the circuit of a clipping at two independent levels using diodes and explain it operation.	5M 5M	CO4	L3 L2
	OR			
18	A. How to clip the input signal above the reference level by using Shunt diode clipper. B. State and prove Clamping circuit theorem.	5M 5M	CO4	L2 L2
19	Draw and explain the working principle of A stable multivibrator and derive frequency of oscillations	10M	CO5	L3
	OR			
20	A. Write short notes on switching times of Transistor. B. What is the use of Schmitt trigger ? Explain its operation.	5M 5M	CO5	L2 L2