R22 Regulation *Subject code: 4E4DC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Regular Examinations, July 2024

PULSE AND DIGITAL CIRCUITS

(Electronics & Communication Engineering)

Maximum Marks: 60 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 10 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	CO	Bloom Tx
All the following questions carry equal marks (10X1M=10 Marks)			
1.a)	Define a linear network.	1	L1
b)	What is a ramp signal?	1	L1
c)	What do you mean by clipping?	2	L2
d)	Mention the applications of voltage comparators	2	L2
e)	How many time base generators are there? Name them	3	L1
f)	What is the restoration time?	3	L2
g)	Define a multivibrator.	4	L1
h)	Mention the expression for T of Monostable multivibrator	4	L2
i)	What is a Sampling gate?	5	L2
j)	Define the term Threshold voltage.	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)			Bloom Tx level
2	Derive an expression for the output levels under steady state conditions of a Low Pass circuit excited by a ramp input. [10M]	1	L3
	OR		
3	a) Explain the working of high-pass RC circuit as a differentiator. [5M] b) Explain the working of low-pass RC circuit as an integrator. [5M]	1	L2 L2
4	a) Draw the circuit of a clipping circuit with diode and explain. [5M] b) Draw a negative clamping and explain it. [5M]	2	L3 L3
	OR		
5	Explain the operation of a double diode clipper with help of circuit diagram and waveforms. [10M]	2	L2
6	a) Explain how transistor acts as a switch? Design transistor switch circuit. [5M] b) Discuss about the piece-wise linear characteristics of a diode. [5M]	3	L2 L2

	OR		
7	Explain the operation of Transistor Miller Time base generator. [10M]	3	L2
8	With the help of neat circuit diagram and waveform, explain the principle of operation of collector coupled monostable multivibrator. [10M]	4	L3
	OR		
9	Design Schmitt trigger. Explain its operation with help of circuit diagram and waveforms. [10M]	4	L4
10	a) Realize AND gate and OR gate using diode logic. [5M] b) Compare TTL and MOS technologies. [5M]	5	L3 L2
	OR		
11	Draw the circuit diagram of a positive 3 i/p NAND gate in TTL logic and explain its working. [10M]	5	L2