R18 Regulation *Subject code:2P3DE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, December 2024

PULSE AND DIGITAL CIRCUITS

(ECE)

Maximum Marks: 70 Date:11.12.2024 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 the low pass RC circuit.	1	L1
2	Write the condition of RC circuit to work as differentiator.	1	L1
3	What are the clipping circuits?	2	L1
4	What do you mean by a regenerative comparator?	2	L1
5	Define storage time and transition time of a diode.	3	L1
6	Define the terms slope error and transmission error.	3	L1
7	What are the types of triggering?	4	L1
8	Define the resolving time and resolution time.	4	L1
9	Write the principle of sampling gates.	5	L1
10	Define Positive and Negative logic systems.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	What is an attenuator? How can an uncompensated attenuator be modified as a compensated attenuator. Give the comparison between perfect compensation, under compensation and over compensation. [10M]	1	L2
	OR		
12	Explain the operation of RLC series and parallel circuits. [10M]	1	L2
13	Classify different types of clipper circuits. Draw their circuits and explain their operation and also transfer characteristics. [10M]	2	L2
	OR		
14	A) What do you mean by biased clamping? [5M] B) A 100V peak square wave with an average value of 0V and a period of 20ms is to be negatively clamped at 25V. Draw the input and output waveforms and necessary circuit diagram. [5M]	2	L2
15	A) Write a short notes on diode switching times. [5M]	3	L2

	B) With the help of neat diagram, explain the working of two diode sampling gate. [5M]		
	OR		
16	With the help of a neat circuit diagram, explain the working of a transistor Current time base generator. [10M]	3	L2
17	What is Monostable Multivibrator? Explain the principle of operation of a monostable multivibrator with the help of neat circuit diagram. [10M]	4	L2
	OR		
18	With the help of neat circuit diagram and waveform, explain the principle of operation of astable multivibrator. [10M]	4	L2
19	Describe the working of a 6-Diode sampling gate with necessary diagram & equations. [10M]	5	L2
	OR		
20	Draw the circuit diagram of a positive 3 i/p NAND gate in DTL logic and explain its working. [10M]	5	L2