



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 3P4DC

B.Tech IV Semester Supplementary Examinations, February 2024

PULSE AND DIGITAL CIRCUITS
(ECE)

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 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	Define linear network.	CO1	L1
2	What is an attenuator?	CO1	L1
3	State Clamping Circuit Theorem	CO2	L1
4	Draw the circuit of series positive Clipper.	CO2	L1
5	Explain the working of diode as a switch.	CO3	L2
6	Write any two differences between voltage time base generator and current time base generator.	CO3	L2
7	List the applications of multivibrators	CO4	L1
8	Explain the working principle of a Schmitt trigger.	CO4	L2
9	Define a sampling gate.	CO5	L1
10	Write the characteristics of TTL and CMOS logic families	CO5	L1

Part-B

Answer All the following questions.

(5X10M=50Marks)

11	Discuss the response of high pass RC circuit to step, ramp and sinusoidal input signals with necessary expressions and wave forms. (10M)	CO1	L3
OR			
12	A. Describe the working of RLC circuit with suitable waveforms (7M) B. Prove that a low pass circuit acts as an integrator (3M)	CO1	L3 L2
13	Explain the working of a diode series clipper and shunt clippers along with their transfer characteristics and their output voltages. (10M)	CO2	L3
OR			
14	Classify different types of clampers circuits. Give their circuits and explain their operation with the aid of transfer characteristics (10M)	CO2	L3
15	Explain the working and characteristics of UJT relaxation oscillator and mention its applications. (10M)	CO3	L3

	OR		
16	A. Explain how diode works as a switch the help of a switching characteristics (10M)	CO3	L3
17	Discuss about the Schmitt trigger circuit with neat diagram. (10M)	CO4	L3
	OR		
18	With a neat diagram, explain the operation of fixed bias bistable multivibrator. (10M)	CO4	L3
19	Draw a neat diagram of a three input NAND gate using transistors (TTL) with totem pole connection and explain its working in detail. (10M)	CO5	L3
	OR		
20	Write a short notes on the following: a) Four diode sampling gate. (5M) b) Six diode sampling gate. (5M)	CO5	L3 L3