R18/R15

ANURAG Engineering College
(An Autonomous Institution)
II B.Tech II Semester Supplementary Examinations, June/July-2024
PULSE AND DIGITAL CIRCUITS
(ELECTRONICS AND COMMUNICATION ENGINEERING)

Time: 3 Hours   **Max. Marks: 75**

Section – A (Short Answer type questions)   (25 Marks)
Answer All Questions

		Course Outcome	B.T Level	Marks
1.	What is the output equation of a Low pass RC circuit when the pulse input is applied.	CO1	L1	2M
2.	Draw the RC High-pass circuit.	CO1	L2	3M
3.	Define voltage comparator	CO2	L1	2M
4.	State clamping circuit theorem	CO2	L2	3M
5.	What is the need of triggering in multivibrators	CO3	L1	2M
6.	Describe commutating capacitors.	CO3	L2	3M
7.	Define phase delay and phase jitter.	CO4	L1	2M
8.	Describe the methods of generating time base waveforms	CO4	L2	3M
9.	What is the basic operating principle of sampling gates.	CO5	L1	2M
10.	List the applications of blocking oscillators.	CO5	L2	3M

Section B (Essay Questions)
Answer all questions, each question carries equal marks.   (5 X 10M = 50M)

11. A)	A symmetrical square wave of amplitude ±0.5V and frequency 2 KHz is impressed on an RC low-pass circuit. If R = 5KΩ, C = 0.1µF, Illustrate and plot the steady-state output with respect to time.	CO1	L3	10M
	OR			
B)	Examine the response of RC low pass circuit applied with a ramp signal as input and obtain the expression for transmission error.	CO1	L3	10M
12. A)	Analyze the transistor Emitter Coupled Clipper operation and its Transfer characteristics.	CO2	L3	10M
	OR			
B)	Design a diode clamper to restore the negative peaks of input signal to zero level. Use a silicon diode with $R_f = 40\Omega$, $R_r = 300K\Omega$. The frequency of the input voltage is 5KHz. Assume RC = 20T.	CO2	L3	10M
13. A)	Derive an expression for the frequency of oscillations of an Astable multi vibrator	CO3	L3	10M
	OR			
B)	Interpret a fixed biased Bistable multivibrator for $V_{CC} = V_{BB} = 18V$, $I_{C(sat)} = 5mA$, $I_{B(actual)} = 1.5I_{B(min)}$, $h_{fe}=20$ and zero base-to-emitter voltage at cut-off.	CO3	L3	10M
14. A)	Survey the methods of generating a time-base waveform.	CO4	L3	10M
	OR			
B)	Discuss about synchronization Astable multivibrator	CO4	L3	10M
15. A)	With the help of a neat diagram, Inspect the working of a bidirectional four-diode sampling gate	CO5	L3	10M
	OR			
B)	Contrast how the sampling gates are differing from the general logic gates and explain the basic principle of sampling gate.	CO5	L3	10M