

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech II Semester Supplementary Examinations, Jan/Feb-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 condition for a high pass circuit to acts as a differentiator?	CO1	L1	2M
2. Define attenuator and What is the role of attenuator in CRO probes?	CO1	L1	3M
3. Write short notes on piece-wise linear diode characteristics.	CO2	L1	2M
4. Explain the applications of voltage comparators	CO2	L2	3M
5. Define Multivibrator? Point out the types of states in multi vibrators.	CO3	L1	2M
6. What is hysteresis? How it can be eliminated in a Schmitt trigger?	CO3	L2	3M
7. Why the time base generators are called sweep circuits? Give most important applications of time –base generators.	CO4	L2	2M
8. What is the basic principle of Bootstrap time base generator?	CO4	L1	3M
9. Write an account of bidirectional diode based sampling gates	CO5	L1	2M
10. Explain how to cancel the pedestal in a sampling gate with suitable circuit diagram.	CO5	L2	3M

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

11. A) Explain the operation of RC circuits as Integrators and differentiators for a square wave input with the circuit diagram and waveforms.	CO1	L2	10M
OR			
B) Apply square wave signal to high pass RC circuit and draw the wave shapes and calculate percentage tilt.	CO1	L3	10M
12. A) Design practical clamping circuit & State and prove Clamping Circuit Theorem.	CO2	L3	10M
OR			
B) Explain the working of a two-level diode clipper with the help of circuit diagram, waveform and transfer characteristics.	CO2	L3	10M
13. A) Derive Expression for the pulse width of a Monostable Multivibrator.	CO3	L3	10M
OR			
Draw and explain the working principle of Fixed bias Bistable multivibrator circuit and also explain the merits and limitations of it.	CO3	L2	10M
14. A) Explain the basic principles of Miller and Bootstrap time-base generators. Give the comparison of both the generation methods.	CO4	L2	10M
OR			
B) What is synchronization? Why it is necessary in waveform generators? Explain the synchronization of a sweep circuit with symmetrical signals.	CO4	L2	10M

15. A) Draw and explain the unidirectional diode sampling gate for more than one input signal and also explain how to overcome the loading effect on control signal? CO5 L3 10M
- OR**
- B) With neat circuit diagram, Explain bidirectional sampling gate using transistors. CO5 L2 10M