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| **S NO** | **QUESTIONS** | **KNOWLEDGE**  **LEVEL** | **CO** |
| **UNIT -I** | | | |
| 1 | Derive an expression for the output of low pass RC circuit excited by Step input. Draw the output for different time constants. | K1 | CO1 |
| 2 | Draw the response of RC High pass circuit when applied with Step input and derive the expression for output voltage. | K4 | CO1 |
| 3 | Explain the response of RC low pass circuit with different time constants when excited by pulse input. | K2 | CO1 |
| **UNIT -2** | | | |
| 1 | Draw the basic circuit diagram of negative peak clamper circuit and explain its operation. | K4 | CO2 |
| 2 | State and prove the clamping circuit theorem, and what are the applications of clampers. | K3 | CO2 |
| 3 | Explain the working of a two-level diode clipper with the help of circuit diagram, waveform and transfer characteristics | K4 | CO1 |
| **UNIT -3** | | | |
| 1 | Define and explain the following.  (a)Diode forward recovery time (b) Diode reverse recovery time | K1 | CO2 |
| 2 | Design the transistor switch inverter for the following specifications Vin=±3V square wave, VCC=10V,IC=1mA hfe=50. Assume transistor is silicon. | K4 | CO2 |
| 3 | Explain DTL NAND gate with truth table and circuit diagram | K1 | CO3 |
| **UNIT -4** | | | |
| **1** | Classify different types of bi - stable multivibrator and explain self-bias transistor binary. | K4 | CO3 |
| **2** | With neat sketch explain fixed bias biasing with commutating capacitor. | K1 | CO3 |
| **3** | Explain the Bi stable multivibrator triggering 250c and zero base to emitter voltage at cut-off. The circuit parameters are VCC=VBB= 6 V, RC=1.2KΩ ohm, R1=4.7KΩ, R2=27 KΩ. Find hfe(min) and stable voltages and currents. | K2 | CO3 |
| **UNIT- 5** | | | |
| **1** | Explain the operation of astable multivibrator with a circuit diagram with relevant waveforms | K2 | CO3 |
| **2** | Explain the operation of monostable multivibrator with a circuit diagram with relevant waveforms | K3 | CO3 |
| **3** | Explain about triggering monostable multivibrator | K2 | CO3 |
| **UNIT 6** | | | |
| **1** | Discuss the working of transistor Bootstrap time base generator with neat sketch. | K2 | CO4 |
| **2** | Explain basic principles of Miller and Bootstrap time base generators. | K4 | CO4 |
| **3** | Draw and explain the basic circuit diagram of Bootstrap time base generator | K1 | CO4 |