

**Question (1):**
(a) In the figure shown, write the name of each device and the label of its terminals

(b) Mark right or wrong ( √ or × ) for the following:

(i) SCR maximum operating frequency is smaller than that of GTO
(ii) The switching speed of BJT is comparatively higher than that of MOSFET
(iii) SCR turned off by applying a negative gate current pulse
(iv) The standard power diode has switching time lower than the shotcky diode
(v) Power Transistors needs only a pulse to make it conducting and thereafter it remains conducting
(vi) Voltage and current ratings of transistors are lower than those of thyristors

**Question (2):** Single-Phase Half-Wave Controlled Rectifier With Resistive Load. If the transformer secondary output voltage is 100 V, the load resistance is 10 Ω, and the thyristor firing angle is π /3 rad. Find:

(i) Draw the output waveforms of load voltage, current and thyristor voltage
(ii) Rectification efficiency
(iii) Load voltage Form factor
(iv) Load voltage Ripple factor
(v) The TUF
(vi) Peak inverse voltage of thyristor

**Question (3):** Single-Phase full-Wave bridge Controlled Rectifier With Resistive Load. If the transformer total secondary output voltage is 150 V, the load resistance is 5 Ω, and the thyristor firing angle is π /2 rad. Find:

(i) Draw the output waveforms of load voltage, current and supply current
(ii) Load voltage Form factor
(iii) Load voltage Ripple factor
(iv) Peak inverse voltage of thyristor

Good luck

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