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Q) MOSFET is a:--> **Voltage driven device**
Q) An IGBT has three terminals called:--> **Drain ,source & gate**
Q) The power semiconductor device which can be switched at frequencies greater than 100 KHz in drive system is :--> **Power MOSFET**
Q) In series string the string efficiency is less due to--> **Un equal voltage distribution.**
Q)Question :For an SCR di/dt protection is achieved byusing:--> **L in series with SCR**
Q)Question :The on state voltage drop across an SCR whose supply voltage is 230v is of the order:--> **1 -1.5v**
Q) In an SCR holding current is--> **Less than latching current.**
Q)Question :For a normal SCR turn on time is--> **Less than turn off time (t_q)**
Q) The turn off time of a thyristor at 50 deg centigrade is 30µs.Its turn off time at 100 deg centigrade is--> **60 µs**
Q) In UJT triggering method the firing angle can be controlled up to--> **180 degree**
Q) To improve the off state characteristics a negative voltage is applied between--> **Gate & cathode**
Q) Natural commutation is employed for--> **Ac input circuits**
Q) A thyristor when triggered will change from forward blocking state to conduction state if its anode to-cathode voltage equal to--> **peak working off state forward voltage drop**
Q) The SCR is rated as 75A peak ,20A average. The greatest possible delay angle is--> **30 & 45 deg centigrade**
Q) The type of commutation employed in phase controlled rectifiers is--> **Class F**
Q) Which of the following does not cause permanent damage of an SCR.--> **High current.**
Q) Voltage commutation is known as--> **Impulse commutation**
Q) The di/dt rating of an SCR is specified for its--> **Rising anode current**
Q) When forward voltage is applied to an SCR ,its--> **Gate recovery time increases**
Q) For a normal SCR turn on time is--> **Less than turn off time t_q**
Q)Question :Turn on time can be reduced by using a:--> **Rectangular pulse of high amplitude & narrow width**
Q)Question :Power IGBT has a switching frequency around:--> **20 KHZ**
Q) If I_H, I_L, I_a, represent holding current, latching current & anode current in a thyristor respectively. Then thyristor will be turned off if--> **$I_a < I_H$,**
Q) An SCR is considered to be a semi-controlled device because--> **It can be turned ON but not OFF with a gate pulse.**
Q) Once SCR starts conducting a forward current, its gate loses control over--> **Anode circuit voltage and current**
Q)A sine voltage of 200Vrms, 50Hz is applied to an SCR through 100ohm resistor. The firing angle is 60. Consider no voltage drop. The output voltage in rms is--> **126.7 V**
Q)A 100VDC is applied to the inductive load of L=0.1H through a SCR. The SCR 's specified latching current is 100mA. The minimum required width of gating pulse to turn on the SCR is--> **100µS**
Q) For dynamic equalizing circuit used for series connected SCRs, the choice ofCis based on:--> **Reverse recovery characteristics**
Q) In synchronized UJT triggering of an SCR, voltage VC across capacitor reaches UJT threshold thrice in each half cycle so that there are three firing pulses during each half cycle. The firing angle of the SCR can be controlled--> **Once in each half cycle**
Q) In a GTO, anode current begins to fall when gate current--> **Is negative peak at t = storage period tS**

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Q) When a SCR is in the forward blocking state,--> **The anode and cathode junctions are forward biased but the gate junction is reverse biased**
Q) In an SCR, anode current flows over a narrow region near the gate during--> **Delay time td**
Q) During forward blocking state, the SCR has--> **Low current, large voltage**
Q) Gate characteristic of a thyristor--> **Has a spread between two curves of Vg-Ig**
Q) For an SCR, di/dt protection is achieved through the use of--> **L in series with SCR**
Q) Which of the following is normally ON device--> **SIT**
Q) A GTO can be turned on by--> **positive signal to gate**
Q)in In a commutation circuit employed to turn-off an SCR, satisfactory turn-off is obtained whenA--> **circuit turn-off time > device turn-off time**
Q)Question :To obtain highest possible string efficiency,the SCRs connected in a string must have--> **same characteristics**
Q) The following PNPN device has a terminal for synchronising purpose--> **SUS**
Q) The function of connecting zener diode in an UJT circuit, used for the triggering of SCRs, is to--> **Provide a constant voltage to UJT to prevent erratic firing**
Q) A thyristor is triggered by a pulse train of 5kHz. The duty ratio is 0.4. If the allowable average power is 100W the maximum allowable power is--> **250 W**
Q) In a SCR,--> **As gate current is raised, forward breakover voltage reduces**
Q) In a single phase full wave ac controller varing the firing angle from 0 to **π** varies voltage from:--> **V_S to 0**
Q) A single phase half wave voltage regulator feeds IKW 230V heater with one SCR & anti parallel with a diode .For a firing angle of 180 deg the load power is:--> **400W**
Q) A.C. Voltage convertor converts:--> **Fixed ac to variable ac with frequency constant**
Q) A single phase ac regulator fed from 50Hz supply feeds a load having 4Ω resistance and 12.73 mH inductance. The control range of firing angle will be--> **45^0 to 180^0**
Q) In class A and class B commutation the resonating circuit has to be--> **Under damped**
Q) What is the power factor of a single phase a.c regulator feeding a resistive load?--> **(Per unit power)$^{1/2}$**
Q) To make switching more even in both half cycles a TRIAC is connected in series with a--> **DIAC**
Q) The characteristics of an TRIAC are similar to a ----------> **SCR**
Q) Which of the following induces greater level of harmonics into power system network when used.--> **TRIAC**
Q) In phase controlled rectification power factor (PF)--> **Deteriorates with increase of α**
Q) In Auxiliary commutation circuit The following occurs:--> **Auxiliary SCR turns off the main SCR**
Q) Class C commutation is also called as--> **Complementary & current**
Q) In all forced commutation circuits the external circuit must reverse bias the SCR for a time----------. Subsequently, the reapplied forward biasing voltage must rise at a dv/dt < dv/dt (reapplieD rated.--> **$t_{off} > t_q$**
Q) For a TRIAC to conduct in first quadrant:--> **MT_2 is positive w.r.t. MT_1 & gate positive**
Q) For a TRIAC to conduct in third quadrant:--> **MT_1 is positive w.r.t. MT_2 & gate negative**
Q) In a single phase diode rectifier fed from $V_m Sin(2\pi ft)$, the lowest ripple frequency and PIV are respectively--> **both a& b**
Q) A single phase one pulse diode rectifier is feeding an RL load with free wheeling diode across the load. For conduction angle β the main diode and free wheeling diode would, respectively, conduct for--

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> β ,π

Q) With an inductive load, the ripple factor of the output _____ of the half wave rectifier improves but that of the output _____ becomes poorer.**--> Current &voltage**

Q) In Class B Commutation circuit a sinusoidal current flows through the --------circuit to charge capacitor with opposite polarity**--> resonant L-C**

Q) In which of the commutation methods the SCR turns off with out external circuit**--> Class F**

Q) In Class E Commutation to turn SCR off ---------- from an external pulse generator via the pulse transformer.**--> a positive pulse is applied to the cathode of the SCR**

Q) In Class D Commutation the auxiliary SCR would have a resistor in its anode lead of say---------- the load resistance.**--> ten times**

Q) In Class C Commutation when SCR1 is triggered, C is switched across SCR2 via SCR1 and the discharge current of C ---------- SCR2.**--> opposes the flow of load current**

Q) Ac regulators are widely used in**--> Fan drives**

Q) A single phase ac voltage controller is controlling current in a purely inductive load. If the firing angle of theSCR is α, what will be the conduction angle of the SCR?**--> Π**

Q) For a single phase a.c. voltage controller feeding a resistive load, what is the power factor?Where α is firing angle measured from voltage zero.--> $\left[\frac{1}{\pi}\left\{(\pi-\alpha)+\frac{1}{2}\sin 2\alpha\right\}\right]^{1/2}$

Q) The PIV rating of the rectifier diode used in a single phase half wave rectifier supplying a capacitive load is approximately ---------- input supply voltage**--> Double peak**

Q) A single phase half wave controlled rectifier circuit has an R-L load. A freewheeling diode is also in the circuit. When freewheeling diode is conducting the SCR**--> is reverse biased**

Q) If the r.m.s source voltage is V volts, the minimum and maximum values of firing angles for a single phase, half wave controlled rectifier, supplying a load with a back e.m.f. of 40 volts are**--> $\alpha = \sin^{-1}(40/\sqrt{2}\ V)$ & $[\pi - \sin^{-1}(40/\sqrt{2}\ V)]$**

Q) A single phase fully controlled thyristor bridge ac dc converter is operating at a firing angle of 25 and on overlap angle of 10 constant dc output current of 20 A. the fundamental power factor Displacement factor) at input ac mains is**--> 0.78**

Q) A single phase fully bridge converter supplies a load drawing constant and ripple free load current. If the triggering angle is 30, the input power factor will be**--> 0.78**

Q)The advantage of using freewheeling diode with bridge type ac/dc conveter is**--> Improved power factor**

Q)In dual converter, the circulating current**--> Allows smooth reversal of load current with improved speed of response**

Q)A single phase half wave controlled rectifier has 400sin314t as the input voltage and R as the load. For the firing angle of 60 for the SCR, the average output is**--> 300 /π.**

Q)Question;A single phase half wave rectifier circuit has a free wheeling diode. The free wheeling diode will conduct only if**--> . load is purely inductive or combination of R and L**

Q) A single phase full wave midpoint thyristor uses a 230 / 200 V transformer with central tap on the secondary side. The PIV per thyristor is**--> 282V**

Q) A single phase full bridge converter with a free wheeling diode feeds an inductive load. The load resistance is 15.53Ω and it has a large inductance providing constant and ripple free d.c current. Input to converter is from an ideal 230V, 50Hz single phase source. For a firing delay angle of 60^0, the

average value of diode current is--> **3.33 A**

Q) A single phase full bridge inverter can operated in load commutation mode in case load consist of--> **RLC under damped**

Q) A single phase full converter feeds power to RLE load with R = 10 Ω,L = 10 mH and E = 50 V, the ac source voltage is 230V, 50Hz. For continuous conduction, what is the average value of load current for firing angle delay of 60^0?--> **5.35 A**

Q) A single phase two pulse converter feeds an R-L load with insufficient smoothing but the conduction is continuous. If the resistance of the load circuit is increased then--> **There is possibility of discontinuous conduction due to an increase in the ripple content**

Q) A single-phase full-bridge inverter is connected to a load of 2.4Ω. The d.c input voltage is 48V. What is the r.m.s output at fundamental frequency?--> $\frac{4\times48}{\sqrt{2}\pi}V$

Q) In a thyristor controlled rectifier, the firing angle of thyristor is to be controlled in the range of--> **0^0 to 180^0**

Q) Which one of the following is the correct statement? In a two quadrant converter working in the 1st and 2nd quadrants--> **Load current can be positive or negative**

Q) For a single phase a.c to d.c controlled rectifier to operate in regenerative mode, which one of the following conditions should be satisfied?--> **Full-controlled bridge, $\alpha > 90^0$, source of e.m.f in load**

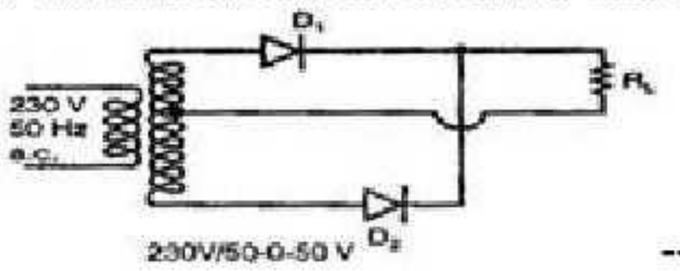
Q) A half-controlled bridge converter is operating from an r.m.s input voltage of 120V. Neglecting the voltage drops, what are the mean load voltage at a firing delay angle of 0^0 and 180^0, respectively?--> $\frac{120\times2\sqrt{2}}{\pi}V$ and 0

Q) A half-controlled bridge converter is operating from an r.m.s input voltage of 120V. Neglecting the voltage drops, what are the mean load voltage at a firing delay angle of 0^0 and 180^0, respectively?--> $\frac{120\times2\sqrt{2}}{\pi}V$ and 0

Q) When the firing angle α of a single phase fully controlled rectifier feeding constant d.c current into the load is 30^0, what is the displacement factor of the rectifier?--> $\frac{\sqrt{3}}{2}$

Q) In a single phase full wave controlled bridge rectifier, minimum output voltage and maximum output voltage are obtained at which conduction angles?--> **0^0, 180^0 respectively**

Q) The input voltage for the given full-wave rectifier circuit is 230V a.c then what is the peak inverse voltage across diodes D_1 and D_2?



--> **100 $\sqrt{2}$ Volts**

Q) In both single phase half wave and full wave rectifiers the form factor of the output voltage approaches _____ with capacitive loads provided the capacitance is _____ enough.--> **unity, large;**

Q) The % THD of the input current of the rectifiers supplying capacitive loads is _____.--> **high.**

Q) The average output voltage of a full wave bridge rectifier and a split supply full wave rectifier are

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_____ provided the input voltages are _____.--> **equal, equal**

Q) In a circulating type of dual convertor the nature of voltage across reactor is:--> **Alternating**

Q) In the _____ conduction mode the output voltage of a bridge rectifier is _____ of load parameters.--> **continuous, independent.**

Q) For continuous conduction, the load impedance of a bridge rectifier should be _____.--> **R-L Where R<<L**

Q) For the same input voltage the bridge rectifier uses _____ the number of diodes used in a split supply rectifier with _____ the PIV rating.--> **double, half;**

Q) In a half controlled converter the output voltage cannot become _____ and hence it cannot operate in the _____ mode.--> **negative, inverter**

Q) In a half controlled converter two _____ of a fully controlled converter are replaced by two _____.--> **thyristors, diodes**

Q) The ripple factor of the output voltage and current waveforms of a single phase uncontrolled half wave rectifier is _____ than unity.--> **greater;**

Q) The period over which the commutation process continues is called the _____ period.--> **over lap**

Q) Length of the overlap period depends on the valve of the source inductance and load _____.--> **current**

Q) In the dc equivalent circuit of a converter the input ac source inductor appears as a loss less resistance called the _____ resistance.--> **commutation**

Q) At the boundary between continuous and discontinuous conduction the value of the output current at ωt = α is _____.--> **Zero**

Q) Single phase half controlled converters are most suitable for loads requiring _____ voltage and current--> **unidirectional**

Q) The free wheeling operating mode of a half controlled converter helps to make the output current _____.--> **continuous**

Q) Commutation overlap introduces _____ in the supply voltage waveform.--> **notches**

Q) If the output voltage of single phase half-controlled converter is controlled by delay angle, extinction angle or symmetrical, there is only one pulse per half cycle in the input current of the converter, and as a result, the lowest order harmonic is--> **third**

Q) In extinction angle control when The output voltage is controlled by varying the extinction angle, β. The fundamental component of input current--> **leads the input voltage, and the displacement factor (and power factor) is leading**

Q) The average output voltage of a ac-dc converter _____ as a result of commutation overlap--> **decrease**

Q) Due to the presence of source _____ commutation in a converter is not _____.--> **inductance ,instantaneous**

Q) The internal impedance of an ac source supplying a converter is largely _____ in nature--> **inductive**

Q) For phase-controlled operation in both single phase full wave half and full controlled bridge converters, the displacement factor (or power factor, which is lagging) decreases, as--> **the average value of output voltage (VdC decreases**