Program: BE Electronics Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VII

Course Code: ELX702 Course Name: Power Electronics

Time: 1hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	The TRIAC is most sensitive in the _____ quadrants
Option A:	1st & 3rd with positive gate current
Option B:	1st with positive gate current & 3rd with negative gate current
Option C:	3st with positive gate current & 1rd with negative gate current
Option D:	1st & 3rd with negative gate current
Q2.	The instantaneous power loss during the delay time of a transistor is given by
Option A:	Ic Vce
Option B:	Ib Vbe
Option C:	Ic Vbe
Option D:	Ib Vce
Q3.	In the output characteristics of a MOSFET with low values of Vds, the value of the on-state resistance is
Option A:	Vds/Ig
Option B:	Vds/Id
Option C:	0
Option D:	∞
Q4.	IGBT possess
Option A:	low input impedance
Option B:	high on-state resistance
Option C:	high input impedance
Option D:	second breakdown problems
Q5.	In the SCR structure the gate terminal is located
Option A:	near the anode terminal
Option B:	in between the anode & cathode terminal
Option C:	in Middle of the anode & cathode terminal
Option D:	near the cathode terminal
Q6.	For a forward conducting SCR device, as the forward anode to cathode

	voltage is increased
Option A:	the device turns on at higher values of gate current
Option B:	the device turns on at lower values of gate current
Option C:	the forward impedance of the device goes on increasing
Option D:	the forward impedance of the device goes on decreasing
Q7.	The forward break over voltage is maximum when
Option A:	Gate current = ∞
Option B:	Gate current = -∞
Option C:	Gate current = 0
Option D:	It is independent of gate current
Q8.	From the two transistor (T1 & T2) analogy of SCR, the total anode current of SCR is _____ in the equivalent circuit.
Option A:	the sum of both the collector current
Option B:	the sum of both the base currents
Option C:	the sum of base current of T1 & collector current of T2
Option D:	the sum of base current of T2 & collector current of T1
Q9.	In SCR higher the magnitude of the gate pulse
Option A:	greater is the time required to inject the charges
Option B:	lesser is the time required to inject the charges
Option C:	greater is the value of anode current
Option D:	lesser is the value of anode current
Q10.	For a single phase thyristor circuit with R load & firing angle α, the conduction angle can be given by
Option A:	π+α
Option B:	2π+α
Option C:	π-α
Option D:	α
Q11.	In a semi-converter with RLE load during the freewheeling period, the energy
Option A:	fed back to the source
Option B:	fed to the inductor(L) and absorbed by E
Option C:	absorbed by the L & E and dissipated at R
Option D:	fed to the L & E and dissipated at R
Q12.	A single-phase full controlled converted with RLE load will act like a line-commutated inverter when the firing angle α
Option A:	α > 180°
Option B:	α > 90°
Option C:	α < 90°
Option D:	α = 90°

Q13.	For the same triggering angle and ratings
Option A:	a semi-converter operates at lower output voltage than a full converter
Option B:	a semi-converter has lower values of input p.f as compared to a full converter
Option C:	a semi-converter operates at higher output voltage than a full converter
Option D:	a semi-converter has more THD as compared to a full converter
Q14.	_____ based inverters do not require self-commutation.
Option A:	IGBT
Option B:	GTO
Option C:	PMOSFET
Option D:	SCR
Q15.	The output of a single-phase half bridge inverter on R load is ideally
Option A:	a sine wave
Option B:	a square wave
Option C:	a triangular wave
Option D:	constant dc
Q16.	The shape of the output voltage waveform in a single PWM is
Option A:	square wave
Option B:	triangular wave
Option C:	quasi-square wave
Option D:	sine wave
Q17.	In a single phase full wave bridge inverter, when the output is Vs or –Vs
Option A:	one SCR and one diode are conducting
Option B:	four SCRs are conducting
Option C:	two diodes are conducting
Option D:	two SCRs are conducting
Q18.	For chopper The values of duty cycle (α) lies between
Option A:	$0<\alpha<1$
Option B:	$0>\alpha>-1$
Option C:	$0<=\alpha<=1$
Option D:	$1<\alpha<100$
Q19.	Find the output voltage expression for a step down chopper with Vs as the input voltage and α as the duty cycle.
Option A:	$Vo = Vs/\alpha$
Option B:	$Vo = Vs \times \alpha$
Option C:	$Vo = Vs^2/\alpha$
Option D:	$Vo = 2Vs/\alpha\pi$
Q20.	If a step up chopper's switch is always kept off then (ideally)
Option A:	Vo = 0

Option B:	Vo = ∞
Option C:	Vo = Vs
Option D:	Vo > Vs
Q21.	The type-C chopper or two quadrant type-A chopper has
Option A:	type-A and type-B choppers in series
Option B:	type-A and type-B choppers in parallel
Option C:	two type-A choppers in series
Option D:	two type-A choppers in parallel
Q22.	A single-phase half wave voltage controller consists of
Option A:	one SCR is parallel with one diode
Option B:	one SCR is anti parallel with one diode
Option C:	two SCRs in parallel
Option D:	two SCRs in anti parallel
Q23.	If k is the duty cycles of the controller, then the rms value of the output voltage in case of a integral cycle control circuit will be? Consider the input to be sinusoidal with peak value Vm and rms value Vs
Option A:	Vs x k
Option B:	Vs/k
Option C:	Vs x √k
Option D:	Vs
Q24.	High frequency gating uses a
Option A:	train of pulses
Option B:	continuous gating block
Option C:	carrier signal
Option D:	none of the above
Q25.	In continues gating
Option A:	overlap angle is very high
Option B:	SCR is heated up
Option C:	size of the pulse transformer is small
Option D:	commutation cannot be achieved effectively