

Program: BE Electronics Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VII

Course Code: EXC703

Course Name: Power Electronics II

Time: 1hour

Max. Marks: 50

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

Q1.	For a single phase thyristor circuit with R load & firing angle α , the conduction angle can be given by
Option A:	$\pi + \alpha$
Option B:	$2\pi + \alpha$
Option C:	$\pi - \alpha$
Option D:	α
Q2.	A single phase full-converter using R load is a _____ quadrant converter and that using an RL load without FD is a _____ quadrant converter
Option A:	one, one
Option B:	two, one
Option C:	one, two
Option D:	two, two
Q3.	In any AC-DC circuit, the freewheeling action
Option A:	improves the power handling capabilities
Option B:	improves CDF
Option C:	increases the THD
Option D:	No change on output
Q4.	A three-phase three pulse type controlled converter is constructed using 3 SCR devices. The circuit is supplying an R load with $\alpha < 30^\circ$. As such, each SCR device would conduct for
Option A:	60° each cycle
Option B:	120° each cycle
Option C:	180° each cycle
Option D:	360° each cycle
Q5.	A single-phase full controlled converted with RLE load will act like a line-commutated inverter when the firing angle α

Option A:	$\alpha > 180^\circ$
Option B:	$\alpha > 90^\circ$
Option C:	$\alpha < 90^\circ$
Option D:	$\alpha = 90^\circ$
Q6.	VSI (Voltage source inverter) using IGBTs are turned off by
Option A:	load commutation
Option B:	line commutation
Option C:	applying a negative gate pulse
Option D:	removing the base signal
Q7.	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
Q8.	In the single-pulse width modulation method, the output voltage waveform is symmetrical about _____ in the negative half cycle.
Option A:	2π
Option B:	$\pi/2$
Option C:	$3\pi/4$
Option D:	$3\pi/2$
Q9.	In case of MPM with two pulses per half cycle of width = d each and γ as the distance between the first pulse and $\omega t=0$, for eliminating the nth harmonic from the output voltage, the value of gamma (γ) must be equal to
Option A:	0
Option B:	π
Option C:	π/n
Option D:	d/n
Q10.	The output voltage from a single phase full wave bridge inverter varies from
Option A:	V_s to $-V_s$
Option B:	V_s to zero
Option C:	$V_s/2$ to zero
Option D:	$-V_s/2$ to $V_s/2$
Q11.	What is the duty cycle of a chopper ?
Option A:	T_{on}/T_{off}
Option B:	T_{on}/T

Option C:	T/T_{on}
Option D:	$T_{off} \times T_{on}$
Q12.	Find the output voltage expression for a step down chopper with V_s as the input voltage and α as the duty cycle.
Option A:	$V_o = V_s \times \alpha$
Option B:	$V_o = V_s/\alpha$
Option C:	$V_o = V_s^2/\alpha$
Option D:	$V_o = 2V_s/\alpha\pi$
Q13.	If a step up chopper's switch is always kept off then (ideally)
Option A:	$V_o = 0$
Option B:	$V_o = \infty$
Option C:	$V_o = V_s$
Option D:	$V_o > V_s$
Q14.	For a step-up/step-down chopper, if the duty cycle > 0.5 then
Option A:	$V_o = V_s$
Option B:	$V_o = 0$
Option C:	$V_o < V_s$
Option D:	$V_o > V_s$
Q15.	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
Q16.	_____ is used in the rotating type UPS system to supply the mains.
Option A:	DC motor
Option B:	Alternator
Option C:	Self excited DC generator
Option D:	Battery bank
Q17.	For high power applications _____ are used as static switches whereas for low power applications _____ are used.
Option A:	Transistors, SCRs
Option B:	SCRs, diodes
Option C:	Diodes, transistors
Option D:	SCRs, transistors
Q18.	_____ is used for critical loads where temporary power failure can cause

	a great deal of inconvenience.
Option A:	SMPS
Option B:	MPS
Option C:	UPS
Option D:	RCCB
Q19.	Which of the following is the effect of non-uniform armature current?
Option A:	Ratio of peak to average and rms to average armature current decreases
Option B:	Ratio of peak to average and rms to average armature current increases
Option C:	Ratio of peak to average increases and rms to average armature current decreases
Option D:	Ratio of peak to average decreases and rms to average armature current increases
Q20.	Which converter/s can be used for DC series motor control?
Option A:	Semi-converters
Option B:	Half-wave converter
Option C:	Full-converter
Option D:	Semi converters and full converter
Q21.	Which of the following statement is not true regarding to DC chopper?
Option A:	Cheap
Option B:	Fast response
Option C:	Regeneration
Option D:	AC to DC control
Q22.	In voltage commutation, in chopper circuit we use _____
Option A:	2 auxiliary thyristors
Option B:	2 diodes
Option C:	1 auxiliary thyristor
Option D:	Many diodes
Q23.	Direct online starter also called D.O.L. starter is used for motors having capacity
Option A:	Less than 5 h.p.
Option B:	Less than 10 h.p.
Option C:	Greater than 10 h.p.
Option D:	For any capacity motor
Q24.	Kramer system for controlling the speed of 3 phase induction motor is mostly used for motors of

Option A:	Below 4000 kW
Option B:	Above 4000 kW
Option C:	Below 3000 kW
Option D:	Above 3000KW
Q25.	The best suited method for smooth speed control by controlling number of poles is
Option A:	Consequent poles method
Option B:	Multiple stator winding method
Option C:	Pole amplitude modulation method
Option D:	Phase Modulation Method