University of Mumbai
Examination 2020- Inter Cluster

Program: BE Instrumentation Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: ISC602 and Course Name: Power Electronics and Drives

Time: 1hour Max. Marks: 50

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

Q1.	A silicon controlled rectifier (SCR) is a
Option A:	Unijunction device
Option B:	Device with three junction
Option C:	Device with four junction
Option D:	Device with two junction
Q2.	Which semiconductor power device out of the following, is not a current triggering device?
Option A:	Thyristor
Option B:	Triac
Option C:	G.T.O
Option D:	MOSFET
Q3.	Leakage current flows through the thyristor in
Option A:	forward blocking mode
Option B:	Reverse blocking mode
Option C:	both forward and reverse blocking mode
Option D:	forward conduction mode
Q4.	A forward voltage can be applied to an SCR after its
Option A:	Anode current is reduced to zero
Option B:	Gate recovery time
Option C:	Reverse recovery time
Option D:	Anode voltage reduces to zero
Q5.	Which triggering method is most reliable method to turn SCR ON
Option A:	Forward voltage triggering
Option B:	Gate triggering
Option C:	dv/dt triggering
Option D:	Thermal triggering

Q6.	In a load commutated DC-DC chopper,the capacitor has a
Option A:	symmetric triangular voltage across its self
Option B:	symmetric rectangular voltage across its self
Option C:	symmetric trapezoidal voltage across its self
Option D:	symmetric sinusoidal voltage across its self
Q7.	A freewheeling diode is used in a controlled rectifier circuit in case of
Option A:	Resistive load
Option B:	Inductive load
Option C:	Capacitive load
Option D:	Impedance load
Q8.	In controlled rectifier, the nature of load current
Option A:	Does not depend on type of load and firing angle delay
Option B:	Depends both on the type of load and firing angle delay
Option C:	Depends only on the type of load
Option D:	Depends only on the firing angle delay
Q9.	During induction heating, the skin depth of penetration is proportional (f = frequency) to
Option A:	f
Option B:	f2
Option C:	1/f
Option D:	$1/\sqrt{f}$
Q10.	For a single-phase, phase-controlled rectifier, with a freewheeling diode across the load
Option A:	The instantaneous output voltage Vo is always positive
Option B:	Vo may be positive or zero
Option C:	Vo may be zero or negative
Option D:	Vo may be zero
Q11.	voltage commutation circuit can be converted into a current commution by interchanging the positions of
Option A:	Diode and capacitor
Option B:	capacitor and SCR
Option C:	Inductor and capacitor
Option D:	capacitor and load
Q12.	Power MOSFET_____ device

Option A:	Voltage controlled unipolar
Option B:	Current controlled unipolar
Option C:	Voltage controlled bipolar
Option D:	Current controlled bipolar
Q13.	Temperature coefficient of IGBT is
Option A:	Negative
Option B:	Positive
Option C:	Flat
Option D:	Zero
Q14.	The main part of an inverter is the
Option A:	Oscillator circuit
Option B:	DC source
Option C:	Step up transformer
Option D:	Filter
Q15.	which of the following load normally need starting torque more than the rated torque?
Option A:	Conveyors
Option B:	Blowers
Option C:	Centrifugal pump
Option D:	Air compressor
Q16.	In a single- pulse modulation of PMW inverter third can be eliminated if pulse width is equal to
Option A:	30^0
Option B:	60^0
Option C:	120^0
Option D:	180^0
Q17.	RC snubber circuit is used to limit the rate of
Option A:	Rise of current in SCR
Option B:	Rise of voltage across SCR
Option C:	Conduction period
Option D:	It is of No use
Q18.	What is the duty cycle of chopper?
Option A:	T_{on} /T_{off}
Option B:	T_{on}/T
Option C:	T/T_{on}

Option D:	T_{off} x T_{on}
Q19.	The features of the chopper drives are
Option A:	Smooth control but slow response
Option B:	Smooth control but fast response
Option C:	Fast response with smooth control but less efficient
Option D:	Fast response with smooth control and highly efficient
Q20.	Which of the following system is preferred for chopper drives?
Option A:	Constant frequency system
Option B:	Variable frequency system
Option C:	Constant voltage system
Option D:	Variable voltage system
Q21.	_____ duty cycle consist of frequent on load and off-load period
Option A:	Continuous Duty with constant Load
Option B:	Continuous Duty With the variable load
Option C:	Short Time duty
Option D:	Intermittent duty
Q22.	Chopper is a _____converter
Option A:	AC to AC converter
Option B:	AC to DC converter
Option C:	DC to DC converter
Option D:	DC to AC converter
Q23.	Induction heating is possible
Option A:	On ferrous material only
Option B:	On magnetic material only
Option C:	On dc supply only
Option D:	with AC supply only
Q24.	The DC shunt motor is running with a certain load. The effect of adding an external resistance in field circuit is to:
Option A:	Increase the Motor Speed
Option B:	Stop the Motor speed
Option C:	Reduce the motor Speed
Option D:	Reduce the armature speed
Q25.	Which statement is true for latching current

Option A:	It is related to the turn off process of the device
Option B:	It is related to the conduction process of the device
Option C:	It is related to turn on process of the device
Option D:	It is related to non-conduction process of the device