Program: BE Electrical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VIII

Course Code: EEC802 and Course Name: Drives and Control

Time: 1 hour Max. Marks: 50

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

Q1.	During high load period of intermittent duty, induction motor is subjected to
Option A:	Acceleration
Option B:	Deceleration
Option C:	Reversal of the speed
Option D:	Constant speed
Q2.	By mounting a flywheel on the motor shaft, load equalization is obtained. Which statement is incorrect
Option A:	Motor rating is reduced
Option B:	Acceleration time is reduced
Option C:	Input current fluctuation is reduced
Option D:	Supply voltage fluctuation is reduced
Q3.	Stepper motor is _____
Option A:	Electro-mechanical device with discrete motion
Option B:	Electro-mechanical device with continuous motion
Option C:	Piezo electric device
Option D:	Electrostatic device
Q4.	The speed of a 200 V DC shunt motor is controlled using a chopper. What will be the voltage coming across the armature when the duty cycle is 60%
Option A:	120 V
Option B:	80 V
Option C:	500 V
Option D:	200 V
Q5.	What is the condition corresponding to steady state speed of motor load system?
Option A:	Motor Torque > Load Torque
Option B:	Motor Torque < Load Torque
Option C:	Motor Torque =Load Torque
Option D:	Motor Torque >= Load Torque
Q6.	Which of the following is an example of variable loss?

Option A:	Friction loss
Option B:	Windage loss
Option C:	Hysteresis loss
Option D:	Armature copper loss
Q7.	What is duty ratio of a chopper?
Option A:	$T_{off} \div (T_{on}+T_{off})$
Option B:	$T_{on} \div T_{off}$
Option C:	$T_{on} \div (T_{on}+T_{off})$
Option D:	$T_{off} \div T_{on}$
Q8.	Condition for steady state stability
Option A:	For a decrease in speed the load torque < Motor developed torque
Option B:	For a decrease in speed the load torque > Motor developed torque
Option C:	For a decrease in speed the load torque = Motor developed torque
Option D:	For an increase in speed the load torque < Motor developed torque
Q9.	Fans have load torque proportional to
Option A:	Inverse of square of speed
Option B:	Square of speed
Option C:	Inverse of speed
Option D:	Speed
Q10.	In synchronous motor, the torque or load angle δ _____ when load on the motor increases up to the rated value
Option A:	Increases
Option B:	Decreases
Option C:	First increases and then decreases
Option D:	Remains constant
Q11.	Phase sequence of supply voltage is reversed in _____ of Induction motor.
Option A:	Regenerative braking
Option B:	Dynamic braking
Option C:	Plugging
Option D:	Rheostatic braking
Q12.	if the rotor resistance of an induction motor is doubled, keeping the other parameters constant , then the maximum torque of the induction motor will be
Option A:	Double
Option B:	Half
Option C:	One fourth
Option D:	Constant
Q13.	Dynamic Response of vector control is _____that of V/f control.
Option A:	Faster than
Option B:	Much slower than

Option C:	Same as
Option D:	Marginally slower
Q14.	With vector control , i_{qs} is analogous to _____ and i_{ds} is analogous to _____of a dc machine
Option A:	Field current, Armature current.
Option B:	Armature current, field current
Option C:	Open circuit current, Short circuit current
Option D:	Armature current, Short circuit current
Q15.	In static Scherbius drive, the maximum value of firing angle is restricted to _____ degree for safe commutation of inverter thyristor
Option A:	90
Option B:	145
Option C:	165
Option D:	180
Q16.	In static rotor resistance control of an induction motor with a diode rectifier fed R, the rotor circuit resistance per phase is increased by _____ ,where δ is duty ratio of transistor.
Option A:	0.1R(1-δ)
Option B:	0.5R(1-δ)
Option C:	0.5R(1+δ)
Option D:	0.1R(1+δ)
Q17.	What is slip power?
Option A:	Product of slip and air gap power
Option B:	Product of slip and output power
Option C:	Product of two times slip and air gap power
Option D:	Product of slip and three times air gap power
Q18.	Calculate the heating time constant of the machine if the thermal capacity (C) of the machine is 12 J/°C and heat dissipation constant value (D) is 3 W/°C.
Option A:	3 s
Option B:	0.25 s
Option C:	72 s
Option D:	4 s
Q19.	In fourth quadrant, motor is in
Option A:	Forward motoring mode
Option B:	Forward braking mode
Option C:	Reverse braking mode
Option D:	Reverse motoring mode
Q20.	Stator voltage control for speed control of induction motor is suitable for
Option A:	Drive of a crane

Option B:	Drive of a ceiling fan
Option C:	Drive of a low speed hoist
Option D:	Constant torque drive
Q21.	Armature voltage control of a DC shunt motor results in
Option A:	Constant power drive
Option B:	Constant torque drive
Option C:	Constant speed drive
Option D:	Variable flux drive
Q22.	220 V, 10 A, 1000 rpm DC separately excited motor having resistance of 1 Ω is excited with rated dc voltage. Calculate the torque developed by the motor on full load.
Option A:	20.05 Nm
Option B:	45.45 Nm
Option C:	22 Nm
Option D:	35.21 Nm
Q23.	For the closed loop speed control of a DC motor with an inner current control loop, the inner loop should be _____ that of the outer loop.
Option A:	Faster than
Option B:	Slightly slower than
Option C:	Of same speed as
Option D:	Much slower than
Q24.	The relationship between the torque(T) and power(P) developed in the DC shunt motor is _____ (Neglecting all the losses)
Option A:	$T \propto \sqrt{P}$
Option B:	$T \propto P$
Option C:	$T \propto \sqrt[3]{P}$
Option D:	$T \propto P^3$
Q25.	Polarity of armature supply voltage is reversed in which type of braking?
Option A:	Dynamic braking
Option B:	Rheostatic braking
Option C:	Regenerative braking
Option D:	Plugging

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	B
Q3.	A
Q4	A
Q5	C
Q6	D
Q7	C
Q8.	A
Q9.	B
Q10.	A
Q11.	C
Q12.	D
Q13.	A
Q14.	B
Q15.	C
Q16.	B

Q17.	A
Q18.	D
Q19.	C
Q20.	B
Q21.	B
Q22.	A
Q23.	A
Q24.	B
Q25.	D