Program: TE Electrical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: EEC502 and Course Name: Electrical Machine-III

Time: 1 hour Max. Marks: 50

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

Q1.	What is the shunt resistance component in equivalent circuit obtained by no load test of an induction motor representative of?
Option A	windage and frictional losses only
Option B	core losses only
Option C	core,windage and frictional losses
Option D	copper losses
Q2.	An induction motor having 8 poles runs at 727.5 rpm. If the supply frequency is 50Hz, the emf in the rotor will have a frequency of
Option A:	1.5Hz
Option B:	2.5 Hz
Option C:	48.5 Hz
Option D:	51.5 Hz
Q3.	A 400, 3-phase, 50 Hz, 4 pole induction motor takes a line current of 10 A with 0.86 pf lagging. What is the stator input?
Option A:	5.95 kW
Option B:	6.95 kW
Option C:	4.45 kW
Option D:	8.38 kW
Q4.	Advantage of using star delta starter over DOL starter in larger capacity motors is
Option A:	Reduces high starting current
Option B:	Increases starting current

Option C:	Prevent single phasing
Option D:	Prevent fault
Q5.	What kind of magnetic field of constant magnitude is produced by a 2-phase balanced supply?
Option A:	constant
Option B:	zero
Option C:	alternating
Option D:	rotating
Q6.	Which of the following motor will run on both a.c. and d.c.
Option A:	Induction motor
Option B:	Universal motor
Option C:	Reluctance motor
Option D:	shaded pole motor
Q7.	Increase in number of poles results in -------in maximum pf
Option A:	Increase
Option B:	Decrease
Option C:	No change
Option D:	slightly change
Q8.	What are the main dimensions of induction motor?
Option A:	Tph and Kw
Option B:	Eph and Ia
Option C:	n and P
Option D:	D and L
Q9.	Skewing of rotor bar decreases -----
Option A:	pf
Option B:	overload capacity
Option C:	both pf and overload capacity

Option D:	efficiency
Q10.	If magnetising current is equal to 2.5 A and ideal short circuit current is 50 A, the despersion coefficient is equal to
Option A:	0.05
Option B:	0.5
Option C:	20
Option D:	0.99
Q11.	What is the cross-sectional area of the rotor bars if it is supposed to carry 300 A current density is 6 A/Sq. mm,
Option A:	50 Sq. mm
Option B:	60 Sq. mm
Option C:	30 Sq. mm
Option D:	100 Sq. mm
Q12.	Which of the following statement is true for selecting rotor slots for a three phase induction motor ?
Option A:	Closed rotor slots are preferred for small size squirel cage induction motor because the reluctancce of the of air gap is small
Option B:	Open rotor slots are preferred for small size squirel cage induction motor because the reluctancce of the of air gap is large
Option C:	the leakage reactance of deep slots is less than that of open slots
Option D:	For closed slot , the magnetising current is more compared to open slot
Q13.	The curve obtained by plotting torque against slip from s=1 to s=0 is called torque slip characteristics. The nature of the graph in the low slip region and in the high slip region is
Option A:	Rising exponential, decaying exponential
Option B:	Both will be straight line
Option C:	Straight line, rectangular parabola
Option D:	Straight line, decaying exponential

Q14.	When applied rated voltage per phase is reduce to one half, the starting torque of three phase squirrel cage induction motor becomes
Option A:	1/2 of the initial value
Option B:	1/4 of the intial value
Option C:	twice the initial value
Option D:	4 time the initial value
Q15.	For speed control of induction motor by adding external resistance on rotor, which is true
Option A:	Not applicable to squirrel cage induction motor
Option B:	Applicable to squirrel cage induction motor
Option C:	Not applicable to slip ring induction motor
Option D:	Will not cause copper loss
Q16.	What is the corresponding slip in the other field, if one of the fields has Zero slip, according to Double field revolving theory?
Option A:	100%
Option B:	200%
Option C:	0
Option D:	50%
Q17.	A permanent split single phase capacitor motor does not have
Option A:	centrifugal switch
Option B:	starting winding
Option C:	squirrel cage rotor
Option D:	high power factor
Q18.	The air gap of three phase induction motor is kept small in order to--
Option A:	obtain high starting torque
Option B:	reduce the noise
Option C:	reduce the magnetizing current

Option D:	reduce the possibility of crawling
Q19.	In 5 hp ,400V,4 Pole,50Hz, 3-phase IM having 36 stator slot and 40 rotor slot might crawl synchronously at speed of
Option A:	750rpm
Option B:	150rpm
Option C:	200rpm
Option D:	50rpm
Q20.	When an induction motor is loaded from no load to full load, its speed and slip will
Option A:	Increases, decreases
Option B:	Decreases, increases
Option C:	Both increases
Option D:	Both decreases
Q21.	Which harmonics is presents in the motoring region of induction motor
Option A:	5th
Option B:	7th
Option C:	11th
Option D:	17th
Q22.	A 230V,4 -pole ,50 Hz, Single phase Induction motor has stator resistance of 2.3 Ω, rotor resistance of 4.2 Ω. It has stator leakage reactance of 3.2 Ω, rotor leakage reactance of 3.2 Ω. It also has a magnetizing reactance of 74Ω. If the motor is running with a slip of 0.05 at rated voltage and frequency, calculate the forward field impedance.
Option A:	$47.33 \angle 49.64^{0}$
Option B:	$27.23 \angle 49.64^{0}$
Option C:	$27.23 \angle 90^{0}$
Option D:	$27.23 \angle 90^{0}$

Q23.	Which of the following motors is used for unity power factor?
Option A:	Hysteresis motor
Option B:	Universal motor
Option C:	Reluctance motor
Option D:	Schrage motor
Q24.	If a three phase 4 pole induction machine is designed for for 48s stator slots with 12 conductors per slot, then number of turn per phase is--------
Option A:	192
Option B:	96
Option C:	288
Option D:	72
Q25.	If the maximum power factor is 0.85 for a dispersion coefficient equal to 0.0812, what will be the maximum power factor for a dispression coefficient equal to 0.122 ?
Option A:	0.783
Option B:	0.85
Option C:	0.566
Option D:	1.277

Program: TE Electrical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: eec502 and Course Name:Electrical Machine-III

Time: 1 hour Max. Marks: 50

Question	Correct Option
Q1.	B
Q2.	A
Q3.	A
Q4	A
Q5	D
Q6	B
Q7	B
Q8.	D
Q9.	C
Q10.	A
Q11.	A
Q12.	A
Q13.	C
Q14.	B
Q15.	A
Q16.	B
Q17.	A
Q18.	C

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