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Started on Tuesday, 5 March 2024, 2:32 PM

State Finished

Completed on Tuesday, 5 March 2024, 2:32 PM

Time taken 14 secs

Marks 0.00/21.00

Grade 0.00 out of 10.00 (0%)

Question **1**

Not answered

Marked out of 1.00

1. The rotor current in a three phase induction motor is:-

- a. d) induced by the stator field cutting the rotor conductors.
- b.
- c) supplied by the a.c. connected to the rotor terminals;
- c. b) supplied by the d.c. connected to the rotor terminals;
- d. a) zero, since no supply is connected to the rotor circuit;

Your answer is incorrect.

The correct answer is:

d) induced by the stator field cutting the rotor conductors.

Question **2**

Not answered

Marked out of 1.00

1. A three phase winding will produce an electromagnetic field which:-

- a. b) reverses direction each cycle;
- b. c) reverses direction each half cycle;
- c. a) rotates at a constant speed;
- d. d) is stationary and constant in strength.

Your answer is incorrect.

The correct answer is:

- c) reverses direction each half cycle;

Question **3**

Not answered

Marked out of 1.00

Increasing the frequency of supply to a three phase stator winding will:-

- a.
- b. a) cause the magnetic field to rotate faster;
- c. d) increase the number of poles in the stator winding.
- d. b) cause the magnetic field to rotate slower;
- c) increase the strength of the magnetic field;

Your answer is incorrect.

The correct answer is:

- a) cause the magnetic field to rotate faster;

Question **4**

Not answered

Marked out of 1.00

1. To reverse the direction of rotation of a rotating magnetic field you must:-

- a. c) reverse the connections to the rotor winding;
- c) increase the strength of the magnetic field;
- b. b) reverse the phase sequence of the supply
- c. a) reverse the connections to alternate pole windings
- d. d) reverse the connections to all pole windings.

Your answer is incorrect.

;
;

The correct answer is:

b) reverse the phase sequence of the supply

Question **5**

Not answered

Marked out of 1.00

The rotor current in an induction motor is:-

- a. a) supplied from the separate rotor supply;
- b. c) supplied from the stator supply terminals;
- c. b) induced by the rotating magnetic field;
- d. (d) always the same frequency as the stator supply.

Your answer is incorrect.

The correct answer is:

b) induced by the rotating magnetic field;

Question **6**

Not answered

Marked out of 1.00

1. The rotor speed of an induction motor is:-

- a. d) dependant only on the size of the load the motor is driving.
- b. b) always slightly lower than the speed of the rotating magnetic field;
- c. c) always the same as the speed of the rotating magnetic field;
- d. a) always slightly higher than the speed of the rotating magnetic field;

Your answer is incorrect.

The correct answer is:

b) always slightly lower than the speed of the rotating magnetic field;

Question **7**

Not answered

Marked out of 1.00

1. A six pole three phase motor on a 50 hertz supply will have a rated speed of about:- and slip speed of---

- a. b) 1440 r.p.m.;60 rpm
- b. c) 960 r.p.m.;40 rpm
- c. a) 2,800 r.p.m.;100rpm
- d. d) 720 r.p.m. 80 rpm

Your answer is incorrect.

The correct answer is:

c) 960 r.p.m.;40 rpm

Question 8

Not answered

Marked out of 1.00

When a three phase motor is running on no load and one supply conductor is open circuited:-

- a. d) the motor will stop due to loss of the RMF.
- b. a) the motor will stop and then start in the opposite direction;
- c. c) the motor will overload and burn out;
- d. b) the motor will continue to run in the same direction

Your answer is incorrect.

;

The correct answer is:

b) the motor will continue to run in the same direction

Question 9

Not answered

Marked out of 1.00

1. When a three phase motor is started with one supply conductor open circuited it will:-

- a. c) not start, but not burn out;
- b. a) start and run normally;
- c. b) not start and may burn out;
- d. d) start, but the direction of rotation will be random.

Your answer is incorrect.

The correct answer is:

d) start, but the direction of rotation will be random.

Question **10**

Not answered

Marked out of 1.00

1. The rotor and stator windings of a slip ring induction motor must have the same:-

- a. a) number of phases;
- b. c) number of poles and phases;
- c. d) connection method (star or delta).
- d. b) number of poles;

Your answer is incorrect.

The correct answer is:

- c) number of poles and phases;

Question **11**

Not answered

Marked out of 1.00

The rotor and stator windings of a slip ring induction motor are normally connected:-

- a. b) rotor in delta and stator in delta;
- b. d) rotor in delta and stator in star.
- c. a) rotor in star and stator in delta;
- d. c) rotor in star and stator in star;

Your answer is incorrect.

The correct answer is:

- c) rotor in star and stator in star;

Question **12**

Not answered

Marked out of 1.00

1. In a squirrel cage induction motor with dual cage rotor:-

- a. a) the inner cage has the higher resistance and carries the greater current at starting;
- b. c) the inner cage has the higher resistance and carries the least current at starting;
- c. b) the outer cage has the higher resistance and carries the greater current at starting;
- d. d) the outer cage has the higher resistance and carries the least current at starting.

Your answer is incorrect.

The correct answer is:

b) the outer cage has the higher resistance and carries the greater current at starting;

Question **13**

Not answered

Marked out of 1.00

1. The mechanical losses on no load in an induction motor include:-

- a. d) friction and windage loss in the motor.
- b. b) eddy currents in the stator and rotor core;
- c. a) hysteresis in the stator and rotor cores;
- d. c) resistance of the stator and rotor windings;

Your answer is incorrect.

The correct answer is:

d) friction and windage loss in the motor.

Question **14**

Not answered

Marked out of 1.00

Most induction motors are designed to have maximum efficiency:-

- a. b) close to full load as most motors run at this load;
- b. a) when rotor resistance equals rotor inductive reactance;
- c. c) at starting to give increased starting torque;
- d. d) at about half of full load as a compromise.

Your answer is incorrect.

The correct answer is:

b) close to full load as most motors run at this load;

Question **15**

Not answered

Marked out of 1.00

A 415V squirrel cage induction motor delivers 116 Nm of torque when started on full voltage. The voltage to the motor must be reduced to 320 volts to limit starting current in line with supply authority requirements. Determine the starting torque at the reduced voltage.

- a. 100
- b. 50
- c. 69

Your answer is incorrect.

The correct answer is:

69

Question **16**

Not answered

Marked out of 1.00

The problem with starting squirrel cage motors with any of the voltage reduction starters is:-

- a. a) the motor must have all six winding ends brought out to the terminal block;
- b. c) reducing the voltage causes an even greater reduction in starting torque;
- c. b) six wires must be run between the switchboard and the starter;
- b) six wires must be run between the switchboard and the starter;
- d.
- d) the increased starting torque may damage the load or couplings.

Your answer is incorrect.

The correct answer is:

- c) reducing the voltage causes an even greater reduction in starting torque;

Question **17**

Not answered

Marked out of 1.00

1. The thermal overload used on motor protection:-

- a. a) interrupts all overloads very quickly;
- b. c) allows slight overloads for longer periods;
- c. d) takes several minutes to isolate any overload.
- d. b) only isolates short circuits instantly;

Your answer is incorrect.

The correct answer is:

- c) allows slight overloads for longer periods;

Question **18**

Not answered

Marked out of 1.00

A motor started with a star-delta starter with overloads fitted between the motor and starter would:-

- a. require an overload current rating equal to rated current times $1/\sqrt{3}$
- b. b) require an overload current rating equal to rated current times
- c. require an overload current rating equal to rated current times $\sqrt{3}$
- d. a) require a thermal overload with six bimetallic elements;

Your answer is incorrect.

The correct answer is:

require an overload current rating equal to rated current times

$1/\sqrt{3}$

Question **19**

Not answered

Marked out of 1.00

1. An advantage of differential thermal overloads over normal overloads is:-
- a. a) they can detect the difference between a short circuit and overload fault
 - b. b) they will protect the motor from loss of one phase of the supply;
 - c. c) they can be used on single, two or three phase motors;
 - d. d) they can also protect against loss of load (ie underload);

Your answer is incorrect.

The correct answer is:

- b) they will protect the motor from loss of one phase of the supply;

Question **20**

Not answered

Marked out of 1.00

Stop buttons and thermal overloads use normally closed contacts because:-

- a. b) normally closed contacts operate quicker than normally open contacts;
- b. a) if they get dirty and will not close the machine will not start (fail safe);
- c. d) normally closed contacts stay cleaner as the dirt cannot get in.
a) normally closed contacts stay cleaner as the dirt cannot get in.
- d) normally closed contacts stay cleaner as the dirt cannot get in.
- d) normally closed contacts stay cleaner as the dirt cannot get in.
- d. c) normally open contacts would need to be connected in parallel;

Your answer is incorrect.

The correct answer is:

a) if they get dirty and will not close the machine will not start (fail safe);

Question **21**

Not answered

Marked out of 1.00

AS/NZS 3000 Clause 4.2.1.2 would be satisfied if:-

- a. c) the motor on a saw bench was controlled by a DOL starter operated by pushbuttons;
- b. AS/NZS 3000 Clause 4.2.1.2 would be satisfied if:-
 - b) the isolating switch can be locked in the off position if not located next to the motor;
- c. a) an automatic reclosing overload device protects the motor under all conditions;
- d.
 - d) copper losses vary as the square of the load while other losses are almost constant.

Your answer is incorrect.

The correct answer is:

- a) an automatic reclosing overload device protects the motor under all conditions;

[◀ Week 8 Quiz](#)

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