

SP15 - Pre-Instructional Survey

Name: _____ Date: _____

1. An induction motor has brushes and a commutator.
 - a. True
 - b. False

2. A **Vector Drive Controller** allows an induction motor to respond as fast as a DC motor.
 - a. True
 - b. False

3. A brushless DC motor requires more maintenance than a brush type DC motor.
 - a. True
 - b. False

4. One advantage of a VFD is that horsepower can vary while torque is constant.
 - a. True
 - b. False

5. What must be done to reverse the direction of a three-phase motor?
 - a. Turn off one phase
 - b. Put DC to the stator
 - c. Reverse any two input leads
 - d. Switch all three phases

6. Why must voltage be reduced along with frequency in a variable frequency speed controller?
 - a. To let the motor cool off
 - b. Because of capacitive reactance
 - c. To maintain the volts/hertz ratio
 - d. To keep the motor from over speeding

7. The speed at which the stator field is revolving is known as _____ speed.
- Slip
 - Fixed
 - Rotor
 - Synchronous
8. What parameters are fed back to a **vector drive controller**?
- Motor speed
 - Rotational angle
 - Winding currents
 - All the above
9. In a variable frequency AC induction motor drive, how is an inverter used?
- Converts AC to DC
 - To filter the pulsating DC
 - Converts DC to variable frequency AC
 - To boost the low DC to high voltage AC
10. In a DC Shunt Motor, if the voltage to the **armature** is reduced, the motor torque is _____.
- Increased
 - Unpredictable
 - Maintained
 - Decreased
11. In a DC Shunt Motor, if the voltage to the **field** is reduced, the motor speed is _____.
- Increased
 - Maintained
 - Decreased
 - Current limited
12. An example of a load that would require a **constant torque/variable horsepower** motor is _____.
- Paper roll machine
 - Clock
 - Fan
 - Conveyor

13. An example of a load that would require a **constant horsepower/variable torque** motor is _____.
- a. Paper roll machine
 - b. Clock
 - c. Fan
 - d. Conveyor
14. An example of a load that would require a **variable torque/variable horsepower** motor is a _____.
- a. Paper roll machine
 - b. Clock
 - c. Fan
 - d. Conveyor
15. A motor that translates electrical pulses into fixed mechanical movements is called a(n) _____.
- a. Brushless DC motor
 - b. Induction motor
 - c. DC servo motor
 - d. Stepper motor
16. A kind of motor that will continue to run with a phase loss is the _____.
- a. Single-phase motor
 - b. Direct-current motor
 - c. Three-phase motor
 - d. Capacitor-start motor
17. Why is a centrifugal switch used in single-phase motors, such as capacitor start and split phase?
- a. To reverse direction of rotation
 - b. To disconnect start winding at 75% speed
 - c. To allow motor to run faster
 - d. So operator can turn off the motor
18. Slip in an AC induction motor is defined as:
- a. Synchronous speed minus no load speed
 - b. Difference between speed of stator field and rotor speed
 - c. Rated speed plus synchronous speed
 - d. Speed at which motor develops torque

19. The rotor of a synchronous motor is constructed differently than an induction rotor.
- To cause the rotor to become magnetized and lock into the stator field
 - To allow for extra windings
 - To have more slip than induction rotor
 - To permit loads to vary its rpm
20. Full load torque is higher than starting torque in an induction motor.
- False
 - True
21. Direct torque control systems require some type of external feedback.
- False
 - True
22. PWM is technique for varying the amplitude of a pulse.
- False
 - True
23. Which of the following braking methods could be used to stop a loaded electric motor?
- DC injection
 - Regenerative
 - Dynamic
 - All of the above
24. Line reactors are sometimes used where, in an AC drive/motor circuit?
- AC drive input
 - AC drive output
 - Neither a or b
 - Both a and b
25. A feedback device used in closed loop drive control is a(an):
- Current meter
 - Encoder
 - Voltage finder
 - Synchronous

SP15 — Pre-Instructional Survey Answer Sheet

1. b
2. a
3. b
4. a
5. c

6. c
7. d
8. d
9. c
10. d

11. a
12. d
13. a
14. c
15. d.

16. c
17. b
18. b
19. a
20. a

21. a.
22. a.
23. d.
24. d.
25. b.