1. This starting method typically allows a motor to develop 150% of its rated _____ while the VFD is drawing less than 50% of its rated current from the mains in the low speed range.
   a. Torque
   b. Energy
   c. Force
   d. Angular momentum

2. The setting for the speed of a VFD is known as which of the following:
   a. Setpoint
   b. Control Point
   c. Reference
   d. Speed Point
   e. All of the above are common names for the speed setting.

3. Assuming no friction losses, if a VFD is operating a fan at 30Hz, ½ the full speed, Which of the following is the correct power consumption?
   a. 50% power consumption
   b. 33% power consumption
   c. 25% power consumption
   d. 12.5% power consumption
   e. 6.7% power consumption

4. Inside the VFD, acceleration, is also known as which of the following:
   a. Increase Speed
   b. Increase Setpoint
   c. Speed UP
   d. Run-Up
   e. Ramp-Up

5. 21. One external switch is attached to the VFD. This switch is for starting and stopping the VFD. A potentiometer is also wired to the VFD and it changes the speed of the motor. This type of control arrangement is known as which of the following?
   a. Local or Hand Control
   b. Remote Control
   c. Cascade Control
   d. Master/Slave Control
   e. Closed Loop Control

6. 29. On a Closed Loop system using a VFD, the output starts to oscillate between minimum and maximum speed. Which of the following might correct the problem?
   a. Increase Proportional Gain
   b. Decrease Proportional Gain
   c. Make Action Normal
   d. Make Action Inverse
   e. Turn Derivative

7. Motor used for elevators is generally
   a. synchronous motor
   b. induction motor

    c.   capacitor starts single phase motor

    d.   any of the above.

8.   For high frequency choppers the device that is preferred is

    a.   Thyristor

    b.   TRIAC

    c.   Transistor

    d.   GTO.

9.   An electric drive consists of

    a.   motor, transmitting shaft and control equipment

    b.   motor and load

    c.   motor, control equipment and load

    d.   motor, supply system and load.

10.   In induction motor, greater the number of poles

    a.   Lesser the speed

    b.   Greater the speed

    c.   Lesser the frequency

    d.   All of these

11.   For driving high inertia loads best type of induction motor suggested is

    a.   Slip ring type

    b.   Squirrel-cage type

    c.   Any of the above

    d.   None of the above

12.   The efficiency of an induction motor can be expected to be nearly

    a.   60 to 90 %

    b.   80 to 90 %

    c.   95 to 98 %

    d.   99 %

13.   The starting torque of a three-phase induction motor can be increased by

    a.   Increasing slip

    b.   Increasing current

    c.   Both (A) and (B)

    d.   None of the above

14.   An induction motor is

    a.   Self-starting with zero torque

    b.   Self-starting with high torque

    c.   Self-starting with low torque

    d.   Non-self-starting

15.   The shape of the torque/slip curve of induction motor is

    a.   Parabola

    b.   Hyperbola

    c.   Rectangular parabola

    d.   Straight line

16. The good power factor of an induction motor can be achieved if the average flux density in the air gap is
   a. Absent
   b. Small
   c. Large
   d. Infinity

17. The 'cogging' of an induction motor can be avoided by
   a. Proper ventilation
   b. Using DOL starter
   c. Autotransformer starter
   d. Having number of rotor slots more or less than the number of stator slots (not equal)

18. A change of 4% of supply voltage to an induction motor will produce a change of approximately
   a. 4% in the rotor torque
   b. 8% in the rotor torque
   c. 12% in the rotor torque
   d. 16% in the rotor torque

19. The torque developed by a 3-phase induction motor least depends on
   a. Rotor current
   b. Rotor power factor
   c. Rotor e.m.f.
   d. Shaft diameter

20. In case of the induction motors the torque is
   a. Inversely proportional to (V-slip)
   b. Directly proportional to $(slip)^2$
   c. Inversely proportional to slip
   d. Directly proportional to slip

21. The low power factor of induction motor is due to
   a. Rotor leakage reactance
   b. Stator reactance
   c. The reactive lagging magnetizing current necessary to generate the magnetic flux
   d. All of the above

22. If a 3-phase supply is given to the stator and rotor is short circuited rotor will move
   a. In the opposite direction as the direction of the rotating field
   b. In the same direction as the direction of the field
   c. In any direction depending upon phase sequence of supply
   d. None of these

23. The speed of a squirrel-cage induction motor can be controlled by all of the following except
   a. Changing supply frequency
   b. Changing number of poles
   c. Changing winding resistance

d. Reducing supply voltage

24. If any two phases for an induction motor are interchanged
   a. The motor will run in reverse direction
   b. The motor will run at reduced speed
   c. The motor will not run
   d. The motor will burn

25. The torque of a rotor in an induction motor under running condition is maximum
   a. At the unit value of slip
   b. At the zero value of slip
   c. At the value of the slip which makes rotor reactance per phase equal to the resistance per phase
   d. At the value of the slip which makes the rotor reactance half of the rotor

26. The maximum torque in an induction motor depends on
   a. Frequency
   b. Rotor inductive reactance
   c. Square of supply voltage
   d. All of the above

27. In which of the following reason induction motor operation is stable?
   a. Low Slip region
   b. High slip region
   c. Any of the two
   d. None of the above

28. At starting, rotor reactance of a 3-phase induction motor is ………… as compared to rotor resistance.
   a. Small
   b. Equal to
   c. Large
   d. None of the above

29. If the slip of a 3-phase induction motor increases, the p.f. of the rotor circuit is
   a. Decreased
   b. Remain unchanged
   c. Increased
   d. None of the above

30. If the air gap between the rotor and stator of a 3-phase induction motor is increased, then
   a. No-load current is increased
   b. Leakage reactance is decreased
   c. Leakage reactance is increased✓
   d. Any of the above