MULTIPLE CHOICE

1. What is the label designation for the leads of the stator brought out to the conduit box?
   a. T
   b. C
   c. V
   d. A

   ANS: A PTS: 1 REF: The Parts of an Induction Motor

2. Any part of the motor that rotates is mounted to the ____.
   a. shaft key
   b. cooling fan
   c. shaft
   d. terminal

   ANS: C PTS: 1 REF: The Parts of an Induction Motor

3. The ____ holds all the parts of a motor together.
   a. mounting base
   b. motor housing
   c. shaft
   d. conduit box

   ANS: B PTS: 1 REF: The Parts of an Induction Motor

4. ____ torque is a term used to describe when the rotor turns in jerks or increments rather than a smooth turning motion.
   a. Cogging
   b. Induction
   c. Counterclockwise
   d. Magnetic

   ANS: A PTS: 1 REF: The Parts of an Induction Motor

5. When electrical energy is applied to a device that can convert it to another form of energy, such as an electric motor converting it to mechanical energy, it performs ____.
   a. transfer
   b. kinetic energy
   c. energy
   d. work

   ANS: D PTS: 1 REF: What is an Induction Motor?

6. ____ is a turning force that determines what mechanical work may be performed.
   a. Torque
   b. Foot/pounds
   c. Energy
   d. Power

   ANS: A PTS: 1 REF: What is an Induction Motor?

7. ____ is the measurement of how much work is accomplished in a specific amount of time, with time being the differentiating focus.
   a. Power
   b. Torque
   c. Work
   d. Energy

   ANS: A PTS: 1 REF: What is an Induction Motor?

8. A method of graphically demonstrating the power factor relationship between energy and power, is with the power ____.
   a. triangle
   b. square
   c. quadrant
   d. grid

   ANS: A PTS: 1 REF: What is an Induction Motor?

9. The most common general purpose NEMA motor is ____.
   a. Design A
   b. Design B
   c. Design C
   d. Design D

   ANS: B PTS: 1 REF: What is an Induction Motor?

10. The highest current draw is at locked-rotor (zero RPM) speed for NEMA Design B motors, and does not start to drop off significantly until the rotor reaches ____ full-load speed.
    a. 70-75%
    b. 80-85%
    c. 90-95%
    d. 100%

    ANS: B PTS: 1 REF: What is an Induction Motor?

11. The torque that the motor develops at zero speed (rotor not turning) when the rated voltage and frequency are applied is called ____ torque.
    a. pull-up
    b. breakdown
    c. locked-rotor
    d. full-load

    ANS: C PTS: 1 REF: What is an Induction Motor?

12. The minimum torque developed from locked-rotor to breakdown torque is called ____ torque.
    a. pull-up
    b. breakdown
    c. locked-rotator
    d. full-load

    ANS: A PTS: 1 REF: What is an Induction Motor?

13. The maximum torque the motor can develop, after having reached full operating speed at the rated voltage and frequency, before stalling (experiencing an abrupt drop in speed), is called ____ torque.
    a. pull-up
    b. breakdown
    c. locked-rotor
    d. full-load

    ANS: B PTS: 1 REF: What is an Induction Motor?

14. The torque produced at full load speed that gives the rated horsepower output of the motor is called ____ torque.
    a. pull-up
    b. breakdown
    c. locked-rotor
    d. full-load

    ANS: D PTS: 1 REF: What is an Induction Motor?

COMPLETION

1. Molten _____ is poured through the laminations into the cavities designed to form rotor bars.

   ANS: aluminum

   PTS: 1 REF: The Parts of an Induction Motor

2. Rotors of induction motors are referred to as _____ rotors.

   ANS: squirrel cage

   PTS: 1 REF: The Parts of an Induction Motor

3. _____ is defined as the capacity, or potential, to perform work.

   ANS: Energy

   PTS: 1 REF: The Parts of an Induction Motor

4. Resistive loads are said to be _____, because voltage and current are always the same polarity, and are being used in the same proportion for all time points along the horizontal axis of wave forms.

   ANS: in-phase

   PTS: 1 REF: What is an Induction Motor?

5. VARs stands for _____.

   ANS:
   Reactive Volt-Amperes
   Reactive Volt Amperes

   PTS: 1 REF: What is an Induction Motor?

SHORT ANSWER

1. What are the two reasons why there is a thin layer of insulation on magnet wire?

   ANS:
   First, it makes it possible to fit many more turns of wire into the limited space slots in the iron stator core; second, inductive (magnetic) coupling requires that the conductors be as close together as possible.

   PTS: 1 REF: The Parts of an Induction Motor

2. Describe what power factor is and what a poor power factor means.

   ANS:
   Measurement of how effectively the electrical energy taken from the electrical power source is used to perform work, to the portion of the electrical energy that is stored and returned to the power supply unused. A poor power factor means that the productive current carrying capacity of the premises electrical distribution system is reduced, because a portion of the capacity is used carrying unproductive electrical currents.

   PTS: 1 REF: The Parts of an Induction Motor