



KNOWLEDGE PROBE ANSWER KEY: Switching Power Supplies

Inverters, UPS, and the Hysteresis Curve

Objectives

1. Define inverter.
2. Define uninterruptible power supply and state how it is used.
3. Explain the operation of a typical push-pull inverter.
4. Explain the role of hysteresis of the transformer in an inverter.
5. Explain the operation of a UPS.

Questions

1. An inverter is a type of power supply that
 - a. Converts AC to DC.
 - b. Converts DC to AC
 - c. Converts AC to AC
 - d. Converts DC to DC
2. What is the main application of an uninterruptible power supply?
 - a. Keep the lights on during a power outage.
 - b. Keep the telephones working during a power failure
 - c. Make sure TV and radios work during an emergency.
 - d. Ensure continuous operation of network server computers during a power failure
3. What is the main source of power of a UPS?
 - a. Battery
 - b. AC power line
 - c. Inverter
 - d. Bank of storage capacitors
4. A UPS contains a(n)
 - a. DC-DC converter
 - b. Switching regulator
 - c. Inverter
 - d. Flyback converter
5. The basic circuit configuration of a push-pull inverter is a(n)
 - a. Amplifier
 - b. Rectifier
 - c. Filter
 - d. Oscillator



6. What component in an inverter circuit sets the AC output frequency?
 - a. A crystal oscillator
 - b. The power transformer magnetic characteristics
 - c. An RC circuit
 - d. The AC power line
7. How is oscillation sustained in an inverter circuit?
 - a. Feedback through a capacitor
 - b. Feedback through magnetic leakage
 - c. Feedback via special transformer windings
 - d. Feedback through an inductor
8. Which of the following is NOT a part of a UPS?
 - a. Inverter
 - b. Battery
 - c. Switching regulator
 - d. Battery charger