
KNOWLEDGE PROBE
An Electronic System Power Supply

Student Learning Outcomes:

1. Define power supply.
2. Name the main components in a common linear AC to DC power supply and explain the purpose and function of each.
3. Define rectifier and name two common types.
4. Name the component that transforms pulsating DC into constant DC.
5. Define ripple and explain where it comes from.

Directions: Circle the best answer for each question.

1. All electronic equipment needs a power supply that furnishes:
 - a. DC voltages
 - b. AC voltages

2. Most power supplies are:
 - a. Batteries
 - b. Circuits that convert AC to DC
 - c. Circuits that convert DC to AC
 - d. Circuits that convert one DC value to another DC value

3. What component of a power supply can change the AC voltage level?
 - a. Filter
 - b. Rectifier
 - c. Transformer
 - d. Regulator

4. The circuit in a power supply that converts AC to DC is called the:
 - a. Filter
 - b. Rectifier
 - c. Transformer
 - d. Regulator

5. What component in a power supply smoothes pulsating DC into more constant DC?
 - a. Capacitor
 - b. Rectifier
 - c. Transformer
 - d. Regulator

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6. What circuit in a power supply holds the output voltage to a constant level?
 - a. Filter
 - b. Rectifier
 - c. Transformer
 - d. Regulator

 7. If a second DC voltage is required by an electronic circuit, a good solution is to:
 - a. Use a second AC to DC power supply
 - b. Use a DC-DC converter
 - c. Use a battery
 - d. Replace the circuit with one that only takes one DC voltage

 8. Rectifiers are made from:
 - a. Transistors
 - b. Diodes
 - c. Integrated circuits
 - d. Passive components

 9. The output of a half wave rectifier is:
 - a. Continuous DC
 - b. DC pulse every half cycle of the AC input
 - c. DC pulse every cycle of the AC input
 - d. AC

 10. A bridge rectifier is made up of how many diodes?
 - a. 1
 - b. 2
 - c. 3
 - d. 4

 11. The small voltage variation on the output of a filter after the rectifier is called:
 - a. Noise
 - b. Pulsations
 - c. Aberrations
 - d. Ripple

 12. Ripple is derived from:
 - a. The charging and discharging of the filter capacitor
 - b. AC input variations that pass through the rectifier
 - c. Noise picked up from external sources
 - d. The circuit being powered by the supply

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13. A regulator circuit at a power supply output compensates for:
- DC load variations
 - AC line voltage variations
 - Ripple
 - All of the above
14. A power supply is a system.
- True
 - False