

1. A step-down transformer providing electricity for a residential neighborhood has exactly 2680 turns in its primary coil. When the voltage applied across the primary is 5850 V the induced voltage in the secondary is 120 V. How many turns are in the secondary coil?

2. A step-up transformer used in an automobile has a potential difference across the primary coil of 12 V and a potential difference across the secondary coil of 20,000 V. If the number of coils in the primary is 21, how many coils are in the secondary?

3. A transformer has 22 coils of wire in the primary and 88 coils in the secondary. Is this a step-up or a step-down transformer?

4. 1.2 V and 10 Amps are applied to the primary coil of a 100X step-up transformer. What is the potential difference across the secondary? How many amps of current does the secondary coil carry?


5. 120 V and .3 Amps of current are applied to the primary of a transformer that has 10,000 coils. If the secondary has 1,000 coils is this a step-up or a step-down transformer? How much power is applied to the primary? How much power will there be in the secondary?


- \_\_\_ 1. Lenz's law states that the induced B field will have a polarity to
- increase the electric aptitude of the induced current
  - attract the B field of the magnet that induced it
  - oppose the B field of the magnet that induced it
  - neither attract nor repel the magnet that induced it
- \_\_\_ 2. The phenomenon of inducing voltage by moving the magnetic field around a conductor is called
- electromagnetic induction
  - electromagnetic radiation
  - transformer induction
  - Faraday's induction
- \_\_\_ 3. A motor is to a generator as a speaker is to a
- microphone
  - transistor
  - transformer
  - magneto
- \_\_\_ 4. The principle advantage of AC over DC is that
- AC circuits multiply power more easily
  - AC can be easily transformed
  - AC circuits are safer
  - AC voltage oscillates whereas DC voltage does not
- \_\_\_ 5. A device consisting of a coil that is mechanically rotated in a stationary magnetic field is called
- a transformer
  - a motor
  - a generator
  - a speaker
- \_\_\_ 6. Electric current can best be induced in a wire by
- setting the wire near a magnet
  - rotating the wire
  - moving the wire up and down
  - moving a magnet up and down near the wire
- \_\_\_ 7. A magnet is moved in and out of a coil of wire. If the number of coils is doubled, it is more difficult to move the magnet. This illustrates
- Faraday's law
  - Lenz's law
  - Henry's law
  - the Edison effect
- \_\_\_ 8. The AC in the secondary coil of a transformer is induced by
- a moving magnetic field
  - a moving electric field
  - motion of the primary coil
  - the iron core of the transformer
- \_\_\_ 9. Which conversion process is the basic function of the electric motor?
- mechanical energy to electrical energy
  - electrical energy to mechanical energy
  - low voltage to high voltage or vice versa
  - alternating current to direct current