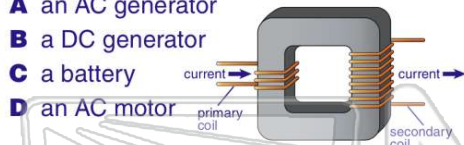




Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 **Power** would most effectively be supplied to the **primary coil** of a **step-up transformer** by

- A an AC generator
- B a DC generator
- C a battery
- D an AC motor



3 Which device is used in the ignition system of a car to induce a **time-varying potential difference** from the car's battery?

- A electric motor
- B electromagnet
- C transistor



2 The **200-turn primary coil** of a transformer is connected to a **120-volt** line. How many **turns** must the **secondary coil** of the transformer have if it is to provide **240 volts**? [Assume 100% efficiency.]

- A 100
- B 400
- C 1,200
- D 2,400

4 What happens to the **frequency** and the **speed** of an electromagnetic wave as it passes from **air into glass**?

- A The frequency decreases and the speed increases.
- B The frequency increases and the speed decreases.
- C The frequency remains the same and the



## PREVIEW

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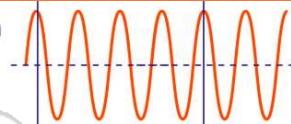
7

longitudinal

- C mechanical and transverse
- D mechanical and longitudinal

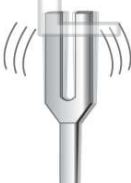


- B wavelength
- C period
- D frequency



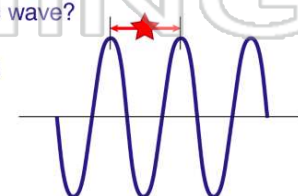
9 How are electromagnetic waves that are produced by **oscillating charges** and sound waves that are produced by **oscillating tuning forks** similar?

- A Both have the same frequency as their respective sources.
- B Both require a matter medium for propagation.
- C Both are longitudinal waves.
- D Both are transverse waves.



10 An electromagnetic wave traveling through a vacuum has a **wavelength** of  $1.5 \times 10^{-1}$  meter. What is the **period** of this electromagnetic wave?

- A  $5.0 \times 10^{-10}$  s
- B  $1.5 \times 10^{-1}$  s
- C  $4.5 \times 10^7$  s
- D  $2.0 \times 10^9$  s

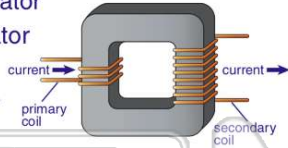




## ANSWER KEY

**Power** would most effectively be supplied to the **primary coil** of a **step-up transformer** by

- A** an AC generator
- B** a DC generator
- C** a battery
- D** an AC motor



(a)

The **200-turn primary coil** of a transformer is connected to a **120-volt** line. How many **turns** must the **secondary coil** of the transformer have if it is to provide **240 volts**? [Assume 100% efficiency.]

- A** 100
- B** 400
- C** 1,200
- D** 2,400

(b)

Which device is used in the ignition system of a car to induce a **time-varying potential difference** from the car's battery?

- A** electric motor
- B** electromagnet
- C** transistor
- D** induction coil



(d)

What happens to the **frequency** and the **speed** of an electromagnetic wave as it passes from **air** into **glass**?

- A** The frequency decreases and the speed increases.
- B** The frequency increases and the speed decreases.
- C** The frequency remains the same and the speed increases.

(d)



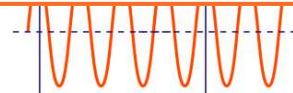
## PREVIEW

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- C** mechanical and transverse
- D** mechanical and longitudinal



- C** period
- D** frequency



How are electromagnetic waves that are produced by **oscillating charges** and sound waves that are produced by **oscillating tuning forks** similar?

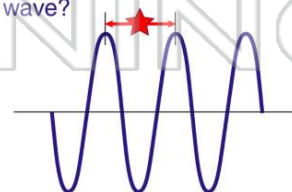
- A** Both have the same frequency as their respective sources.
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(a)

An electromagnetic wave traveling through a vacuum has a **wavelength** of  $1.5 \times 10^{-1}$  meter. What is the **period** of this electromagnetic wave?

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(a)