ARKANSAS PHYSICS · UNIT 3 · 25 QUESTIONS

# Electricity, Magnetism, and Waves — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **A charge of 60 coulombs passes a point in 20 seconds The current is**

- A 2 amperes
- B 3 amperes
- C 4 amperes
- D 6 amperes

Understand It with Pulse | Flag a mistake

2 **A current of 4 amperes flows through a resistor of 6 ohms The voltage across the resistor is**

- A 10 volts
- B 24 volts
- C 28 volts
- D 40 volts

Understand It with Pulse | Flag a mistake

3 **A voltage of 36 volts is applied across a resistor carrying 4 amperes The resistance is**

- A 12 ohms
- B 32 ohms
- C 9 ohms
- D 144 ohms

Understand It with Pulse | Flag a mistake

4

**Resistors of 4 ohms, 6 ohms, and 10 ohms are connected in series The total resistance is**

A 10 ohms

B 16 ohms

C 24 ohms

D 20 ohms

Understand It with Pulse

Flag a mistake

**5** **Resistors of 6 ohms and 3 ohms are connected in parallel The total resistance is**



A 2 ohms

B 9 ohms

C 3 ohms

D 18 ohms

Understand It with Pulse | Flag a mistake

6 **Resistors of 4 ohms and 4 ohms are connected in parallel The total resistance is**

- A 8 ohms
- B 2 ohms
- C 4 ohms
- D 16 ohms

Understand It with Pulse | Flag a mistake

7 **A voltage of 12 volts drives a current of 3 amperes The power dissipated is**

- A 4 watts
- B 15 watts
- C 36 watts
- D 108 watts

Understand It with Pulse | Flag a mistake

8 **A current of 2 amperes flows through a resistor of 5 ohms The power dissipated is 4 times 5 watts The power dissipated is**

A 10 watts

B 40 watts

C 50 watts

D 20 watts

Understand It with Pulse | Flag a mistake

**9** **A device uses 100 watts for 30 seconds The energy used is**



A 3000 joules

B 300 joules

C 130 joules

D 30000 joules

Understand It with Pulse | Flag a mistake

10 **A force of 12 newtons acts on a charge of 3 coulombs in an electric field The electric field strength is**

- A 9 newtons per coulomb
- B 4 newtons per coulomb
- C 15 newtons per coulomb
- D 36 newtons per coulomb

Understand It with Pulse | Flag a mistake

11 **The distance between two charges doubles while the charges stay the same The electric force between them becomes**

- A Double
- B Half
- C One quarter as large
- D Four times as large

Understand It with Pulse | Flag a mistake

12 **Like magnetic poles placed near each other will**

A Attract

B Have no effect

C Become electric

D Repel

Understand It with Pulse | Flag a mistake

13 **In a series circuit, the quantity that is the same everywhere is the**

A Current

B Voltage

C Resistance

D Power

Understand It with Pulse | Flag a mistake

14 **In a parallel circuit, the quantity that is the same across each branch is the**

A Current

B Voltage

C Resistance

D Charge

Understand It with Pulse | Flag a mistake

15 **A wave has a frequency of 5 hertz and a wavelength of 8 meters The wave speed is**



A 13 meters per second

B 3 meters per second

C 40 meters per second

D 45 meters per second

Understand It with Pulse | Flag a mistake

16 **A wave has a period of 0.25 seconds Its frequency is**

- A 0.25 hertz
- B 2 hertz
- C 25 hertz
- D 4 hertz

Understand It with Pulse | Flag a mistake

17 **A wave travels at 60 meters per second with a frequency of 12 hertz Its wavelength is**

- A 5 meters
- B 12 meters
- C 48 meters
- D 720 meters

Understand It with Pulse | Flag a mistake

**18** **Sound is an example of a longitudinal wave because the particles vibrate**



A At right angles to the wave direction

B Parallel to the wave direction

C In a circle only

D Not at all

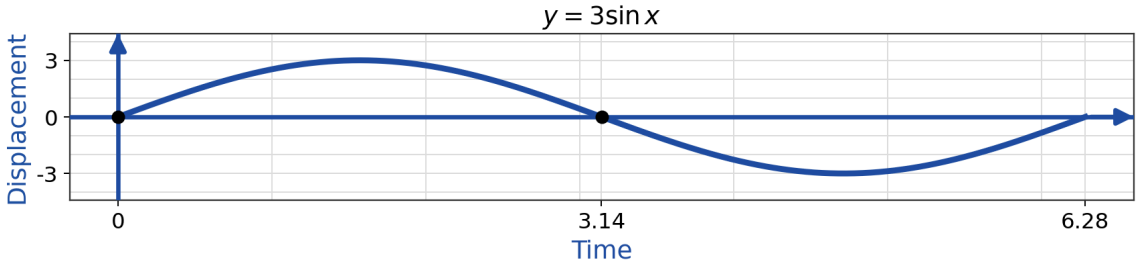
Understand It with Pulse | Flag a mistake

**19** **The amplitude of a wave is a measure of its**

- **A** Speed
- **B** Wavelength
- **C** Energy and maximum displacement
- **D** Frequency

Understand It with Pulse | Flag a mistake

**20** **The graph shows a wave with time on the horizontal axis The amplitude of the wave shown is**




- **A** 1 unit
- **B** 6 units
- **C** 9 units
- **D** 3 units

Understand It with Pulse | Flag a mistake

21 **Radio waves have the longest wavelength in the electromagnetic spectrum Visible light compared with radio waves has a**

A Shorter wavelength and higher frequency

B Longer wavelength and lower frequency

C Shorter wavelength and lower frequency

D Longer wavelength and higher frequency

Understand It with Pulse | Flag a mistake

22 **When light passes from air into glass it slows down and bends This bending of light is called**

A Reflection

B Refraction

C Diffraction

D Interference

Understand It with Pulse | Flag a mistake

**23** **A compass needle points roughly toward geographic north because Earth acts like a**




A Electric motor

B Battery

C Bar magnet

D Lens

Understand It with Pulse | Flag a mistake

24 **A charge of 48 coulombs passes a point in 8 seconds What is the current in amperes**

ANSWER

Understand It with Pulse | Flag a mistake

25 **Resistors of 7 ohms, 8 ohms, and 5 ohms are connected in series What is the total resistance in ohms**

ANSWER

Understand It with Pulse | Flag a mistake

# ANSWER KEY

1. B
2. B
3. C
4. D
5. A
6. B
7. C
8. D
9. A
10. B
11. C
12. D
13. A
14. B
15. C
16. D
17. A
18. B
19. C
20. D
21. A
22. B
23. C
24. 6
25. 20

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