ARIZONA 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 voltage of 12 V is applied across a resistor of 4 ohms. The current is**



- **A** 48 A
- **B** 3 A
- **C** 8 A
- **D** 16 A

Understand It with Pulse | Flag a mistake

2 **A voltage of 24 V drives a current of 6 A. The resistance is**

- A 144 ohms
- B 30 ohms
- C 18 ohms
- D 4 ohms

Understand It with Pulse | Flag a mistake

3 **Resistors of 5 ohms, 10 ohms, and 15 ohms are connected in series. The total resistance is**

- A 30 ohms
- B 3.3 ohms
- C 20 ohms
- D 25 ohms

Understand It with Pulse | Flag a mistake

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

A 9 ohms

B 18 ohms

C 2 ohms

D 3 ohms

Understand It with Pulse | Flag a mistake

5 **A device operates at 12 V and draws 2 A. The electrical power used is**



A 6 W

B 24 W

C 10 W

D 14 W

Understand It with Pulse | Flag a mistake

6 **A current of 2 A flows for 30 s. The charge that flows is**

- A 15 C
- B 32 C
- C 60 C
- D 28 C

Understand It with Pulse | Flag a mistake

7 **An electric force of 20 N acts on a charge of 5 C. The electric field strength is**

- A 100 N/C
- B 25 N/C
- C 15 N/C
- D 4 N/C

Understand It with Pulse | Flag a mistake

8 **Two objects with the same kind of electric charge will**

A repel each other

B attract each other

C have no effect on each other

D lose their charge

Understand It with Pulse | Flag a mistake

9 **A changing magnetic field through a coil induces a**

A current

B resistance

C charge

D mass

Understand It with Pulse | Flag a mistake

10 **If the frequency of a sound wave increases, its pitch**



A gets lower

B gets higher

C stays the same

D becomes zero

Understand It with Pulse | Flag a mistake

11 **A wave has frequency 50 Hz and wavelength 4 m. Its speed is**

- **A** 12.5 m/s
- **B** 54 m/s
- **C** 200 m/s
- **D** 46 m/s

Understand It with Pulse | Flag a mistake

12 **A wave has speed 300 m/s and wavelength 5 m. Its frequency is**

- **A** 1500 Hz
- **B** 60 Hz
- **C** 295 Hz
- **D** 305 Hz

Understand It with Pulse | Flag a mistake

13 **A wave has frequency 20 Hz. Its period is**

A 20 s

B 0.05 s

C 0.5 s

D 2 s

Understand It with Pulse | Flag a mistake

14 **Which wave is longitudinal**

A sound

B light

C a water surface wave

D a radio wave

Understand It with Pulse | Flag a mistake

15 **In a series circuit, the current through each part of the circuit is**

- A the same everywhere
- B larger near the battery
- C zero in the resistors
- D different in each part

Understand It with Pulse | Flag a mistake

16 **In a parallel circuit, the voltage across each branch is**

- A the same for each branch
- B zero in every branch
- C larger in the first branch
- D split equally among branches

Understand It with Pulse | Flag a mistake

17 **A device uses 100 W for 10 s. The electrical energy used is**

A 10 J

B 110 J

C 1000 J

D 90 J

Understand It with Pulse | Flag a mistake

18 **A voltage of 36 V is applied across a resistor of 9 ohms. The current, in amperes, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A voltage of 20 V drives a current of 5 A. The resistance, in ohms, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **A device operates at 10 V and draws 3 A. The electrical power, in watts, is ____**



ANSWER _____

Understand It with Pulse | Flag a mistake

21 **A wave has frequency 120 Hz and wavelength 2.5 m. Its speed, in meters per second, is ____**

ANSWER _____

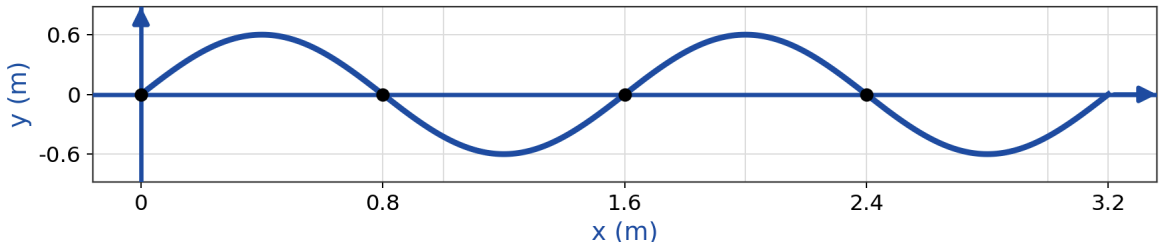
Understand It with Pulse | Flag a mistake

22 **A wave has speed 400 m/s and wavelength 8 m. Its frequency, in hertz, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **The graph shows the displacement of a wave against position. The wavelength of the wave is**



A 0.80 m

B 1.60 m

C 3.20 m

D 0.60 m

Understand It with Pulse | Flag a mistake

24 **Adding another resistor in parallel makes the total resistance**

A decrease

B stay the same

C increase

D become zero

Understand It with Pulse | Flag a mistake

25 **The strength of an electromagnet can be increased by**



A increasing the current or the number of turns

B decreasing the current to zero

C removing the iron core

D using a weaker battery

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. D
3. A
4. C
5. B
6. C
7. D
8. A
9. A
10. B
11. C
12. B
13. B
14. A
15. A
16. A
17. C
18. 4
19. 4
20. 30
21. 300
22. 50
23. B
24. A
25. A

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