PHYSICS · NEBRASKA

Physics

Practice Test

Unit 3: Electricity, Magnetism and Waves

25 Questions

Original practice test based on the Nebraska curriculum. Work through each question, then check your answers at the end.

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.

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Question 1

A current of 3 A flows through a resistor of 4 ohms. The voltage across it is

A) 0.75 V

B) 7 V

C) 1.33 V

D) 12 V

Understand It with Pulse | Flag a mistake

Question 2

A voltage of 24 V is applied across a 8 ohm resistor. The current is

A) 3 A

B) 192 A

C) 32 A

D) 0.33 A

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Question 3

Resistors of 4 ohms and 6 ohms in series have total resistance

A) 2.4 ohms

B) 24 ohms

C) 10 ohms

D) 1.5 ohms

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Question 4

Resistors of 6 ohms and 3 ohms in parallel have total resistance

A) 9 ohms

B) 2 ohms

C) 18 ohms

D) 0.5 ohms

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Question 5

A device uses current 2 A at voltage 12 V. Its electric power is

A) 6 W

B) 14 W

C) 0.17 W

D) 24 W

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Question 6

If the distance between two point charges doubles, the electric force between them

A) doubles

B) halves

C) becomes one fourth

D) becomes four times

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Question 7

Like electric charges

A) attract

B) repel

C) have no effect

D) always cancel

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Question 8

The electric field at a point is defined as the force per unit

A) mass

B) charge

C) distance

D) time

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Question 9

In a series circuit, the quantity that is the same through every part is the

A) voltage

B) resistance

C) current

D) power

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Question 10

In a parallel circuit, the quantity that is the same across every branch is the

A) current

B) voltage

C) resistance

D) charge

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Question 11

A wave has frequency 5 Hz and wavelength 4 m. Its speed is

A) 1.25 m/s

B) 9 m/s

C) 20 m/s

D) 0.8 m/s

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Question 12

A wave has period 0.2 s. Its frequency is

A) 0.2 Hz

B) 20 Hz

C) 0.04 Hz

D) 5 Hz

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Question 13

Sound travels fastest in

A) a vacuum

B) air

C) water

D) steel

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Question 14

A magnetic field exerts a force on a charged particle only when the particle is

A) at rest

B) moving

C) neutral

D) inside a wire

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Question 15

Changing the magnetic flux through a coil

A) induces a voltage in the coil

B) stops all current

C) has no effect

D) removes the magnetic field

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Question 16

The unit of electric charge is the

A) ampere

B) volt

C) ohm

D) coulomb

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Question 17

A current of 4 A flows for 5 s. The charge transferred, in coulombs, is ____

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Question 18

A voltage of 18 V is applied across a 6 ohm resistor. The current, in amperes, is ____

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Question 19

A wave has speed 300 m/s and frequency 50 Hz. Its wavelength, in meters, is ____

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Question 20

A wave has frequency 20 Hz. Its period, in seconds, is ____

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Question 21

In a transverse wave, particles of the medium move

A) along the wave direction

B) perpendicular to the wave direction

C) only at the source

D) not at all

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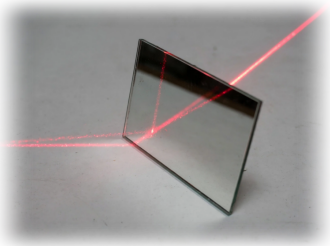

Question 22

When light reflects from a flat mirror, the angle of reflection compared with the angle of incidence is

A) larger

B) smaller

C) equal

D) twice as large

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Question 23

The speed of light in a vacuum is about

A) 3.0×10^8 m/s

B) 3.0×10^5 m/s

C) 340 m/s

D) 1.5×10^8 m/s

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Question 24

A device uses current 3 A at voltage 10 V. Its power, in watts, is ____

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Question 25

Two resistors of 10 ohms each in series have total resistance, in ohms, of ____

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ANSWER KEY

1. D
2. A
3. C
4. B
5. D
6. C
7. B
8. B
9. C
10. B
11. C
12. D
13. D
14. B
15. A
16. D
17. 20
18. 3
19. 6
20. 0.05
21. B
22. C
23. A
24. 30
25. 20

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