NORTHWEST TERRITORIES PHYSICS 12 (MPH--12) · UNIT D · 25 QUESTIONS

# Circuits and Electromagnetism — 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 drives a current of 3 A through a resistor. The resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A voltage of 24 V is applied across an 8 ohm resistor. The current, in amperes, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A current of 2 A flows through a 15 ohm resistor. The voltage across it, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Resistors of 12 ohms and 4 ohms are connected in parallel. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A device uses 12 V and draws 2 A. The power it uses, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A current of 3 A flows through a 4 ohm resistor. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A voltage of 12 V is applied across a 6 ohm resistor. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **In a series circuit, the current through each component is**

A larger in larger resistors

B smaller in larger resistors

C zero

D the same

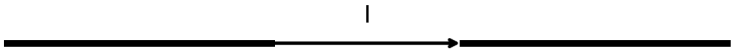
Understand It with Pulse | Flag a mistake

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

- **A** larger in larger resistors
- **B** smaller in larger resistors
- **C** zero
- **D** the same

Understand It with Pulse | Flag a mistake

**12** **The diagram shows a straight wire carrying current to the right. The magnetic field direction just below the wire is**




- **A** into the page
- **B** out of the page
- **C** to the left
- **D** to the right

Understand It with Pulse | Flag a mistake

13 **The diagram shows a vertical wire carrying current upward, with point P to the right of the wire. The magnetic field direction at P is**




A into the page

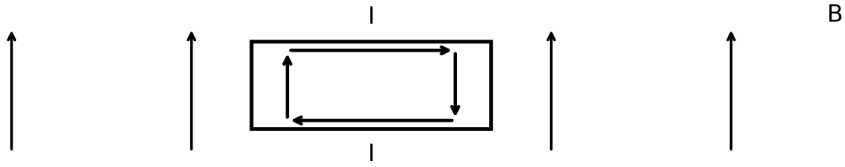
B out of the page

C upward

D downward

Understand It with Pulse | Flag a mistake

14 **The diagram shows a motor coil in a magnetic field pointing upward. The force on the top side of the coil, where current flows to the right, is**




A into the page

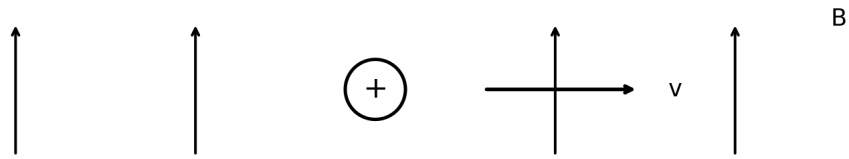
B out of the page

C upward

D downward

Understand It with Pulse | Flag a mistake

**15** **The diagram shows a positive particle moving to the right in a magnetic field pointing upward. The force on the particle is**




A into the page

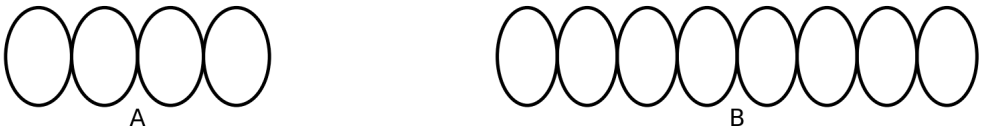
B out of the page

C upward

D downward

Understand It with Pulse | Flag a mistake

16 **The diagram shows two solenoids, A with fewer turns and B with more turns, carrying the same current. The stronger magnetic field is in**




A solenoid A

B solenoid B

C neither, they are equal

D neither, there is no field

Understand It with Pulse | Flag a mistake

17 **The magnetic field around a straight current carrying wire forms**

A straight lines

B circles around the wire

C lines from north to south

D no pattern

Understand It with Pulse | Flag a mistake

18 **An electric motor works because a current in a magnetic field**

A loses its charge

B becomes a magnet

C experiences a force

D stops flowing

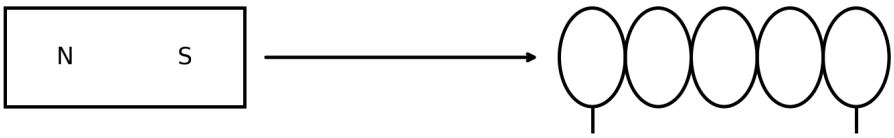
Understand It with Pulse | Flag a mistake

**19** **Electromagnetic induction occurs when a changing magnetic flux**

- **A** produces a voltage
- **B** stops all current
- **C** heats a wire
- **D** creates a battery

Understand It with Pulse | Flag a mistake

**20** **The diagram shows a bar magnet and a coil. The induced current in the coil, when viewed from the magnet, flows**




- **A** clockwise
- **B** counterclockwise
- **C** into the page at the top of the coil
- **D** no current is induced

Understand It with Pulse | Flag a mistake

21 **A generator differs from a motor in that a generator**

- A converts motion into electrical energy
- B converts electrical energy into motion
- C needs no magnetic field
- D uses only batteries

Understand It with Pulse | Flag a mistake

22 **In a series circuit, the total supply voltage is**

- A the same across each component
- B zero
- C doubled by each resistor
- D shared among the components

Understand It with Pulse | Flag a mistake

**23** **The total resistance of resistors in parallel is always**

- **A** less than the smallest resistor
- **B** greater than the largest resistor
- **C** equal to the sum
- **D** zero

Understand It with Pulse | Flag a mistake

**24** **A voltage of 20 V is applied across a 5 ohm resistor. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25

## The strength of an electromagnet can be increased by

A using more turns or a larger current

B using fewer turns

C reducing the current

D removing the core

Understand It with Pulse

Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | 4 | **10.** | D | **19.** | A |
| **2.** | 3 | **11.** | D | **20.** | A |
| **3.** | 30 | **12.** | A | **21.** | A |
| **4.** | 20 | **13.** | A | **22.** | D |
| **5.** | 2 | **14.** | B | **23.** | A |
| **6.** | 3 | **15.** | B | **24.** | 80 |
| **7.** | 24 | **16.** | B | **25.** | A |
| **8.** | 36 | **17.** | B | | |
| **9.** | 24 | **18.** | C | | |

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