BRITISH COLUMBIA 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 _____

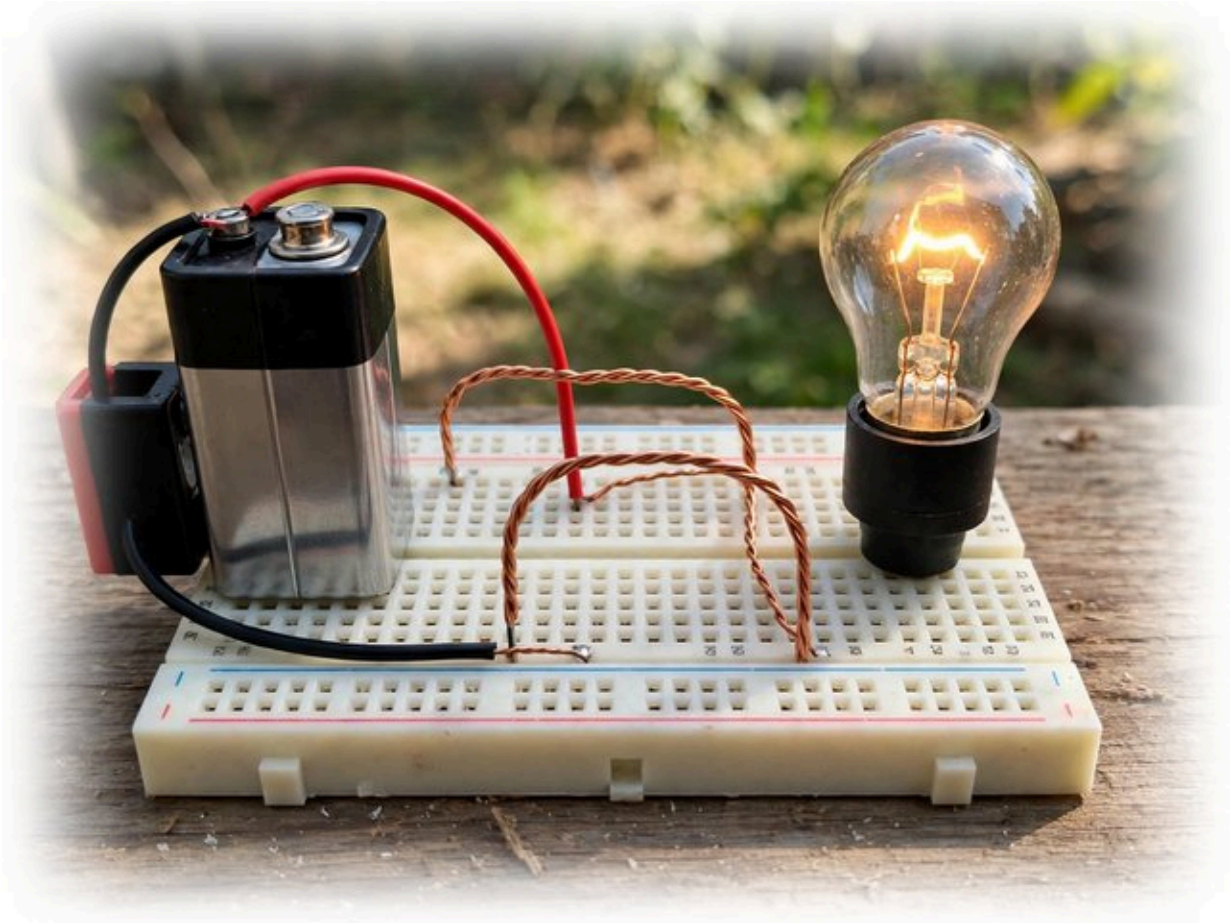
Understand It with Pulse | Flag a mistake

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

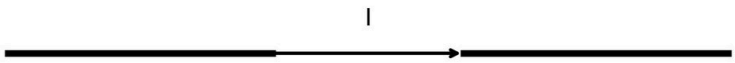
B smaller in larger resistors

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**



Question 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

A into the page

B out of the page

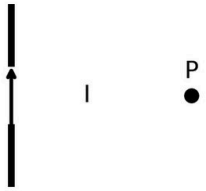
C to the left

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**



Question 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

A into the page

B out of the page

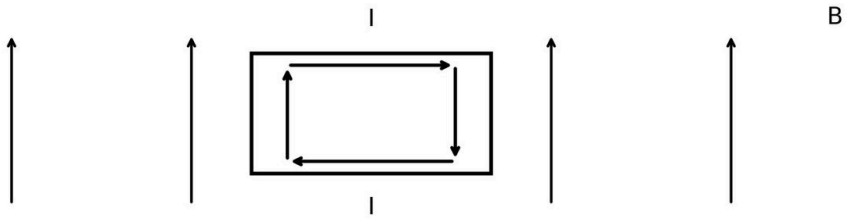
C upward

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**



Question 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

A into the page

B out of the page

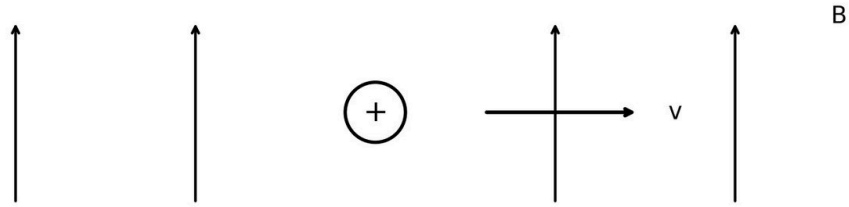
C upward

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**



Question 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

A into the page

B out of the page

C upward

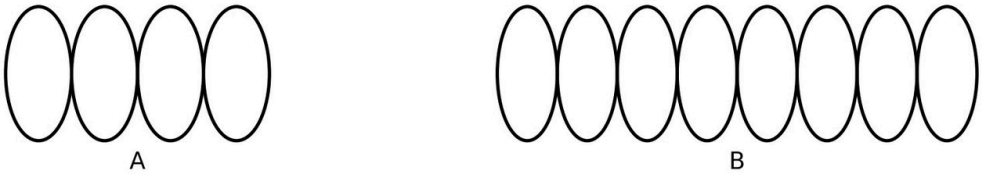
D downward

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



Question 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

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

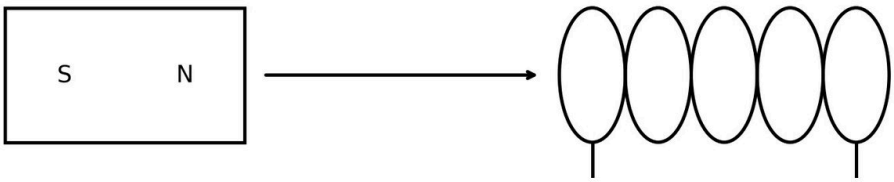
B stops all current

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**



Question 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) out of the page at the top of the coil

D) no current is induced

A clockwise

B counterclockwise

C out of 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.**	D
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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