CALIFORNIA PHYSICS · UNIT 3 · 25 QUESTIONS

Electricity and Magnetism — 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 12 V battery drives 3 A through a resistor. Its resistance is**

- A 9 Ω
- B 15 Ω
- C 4 Ω
- D 36 Ω

Understand It with Pulse | Flag a mistake

2 **A current of 4 A flows through 5 Ω. The voltage is**

- A 9 V
- B 0.8 V
- C 1.25 V
- D 20 V

Understand It with Pulse | Flag a mistake

3 **Resistors of 4 Ω and 6 Ω in series give**

- A 10 Ω
- B 1 Ω
- C 24 Ω
- D 2.4 Ω

Understand It with Pulse | Flag a mistake

4 **Resistors of 6 Ω and 3 Ω in parallel give**

- A 3 Ω
- B 2 Ω
- C 9 Ω
- D 18 Ω

Understand It with Pulse | Flag a mistake

5 **A 10 V supply drives 2 A. The power is**

- A 20 W
- B 12 W
- C 8 W
- D 5 W

Understand It with Pulse | Flag a mistake

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

- A 32 C
- B 0.07 C
- C 15 C
- D 60 C

Understand It with Pulse | Flag a mistake

7 **Like charges**

- A attract
- B have no effect
- C repel
- D cancel to zero charge

Understand It with Pulse | Flag a mistake

8 **Doubling the distance between two point charges changes the force by a factor of**

- A $\frac{1}{2}$
- B $\frac{1}{4}$
- C 4
- D 2

Understand It with Pulse | Flag a mistake

9 **Electric field lines point away from a**

A neutral object

B magnet

C negative charge

D positive charge

Understand It with Pulse | Flag a mistake

10 **A 20 N/C field acts on a 3 C charge. The force is**

A 60 N

B 6.7 N

C 23 N

D 17 N

Understand It with Pulse | Flag a mistake

11 **In a series circuit, the current is**

- A largest in the first resistor
- B split at each branch
- C zero in the wires
- D the same everywhere

Understand It with Pulse | Flag a mistake

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

- A largest in the first branch
- B split equally
- C zero
- D the same

Understand It with Pulse | Flag a mistake

13 **A magnetic field exerts a force on a**

A charge moving parallel to the field

B moving charge

C stationary charge

D neutral object at rest

Understand It with Pulse | Flag a mistake

14 **Magnetic field lines outside a bar magnet go from**

A south to north

B east to west

C the center outward

D north to south

Understand It with Pulse | Flag a mistake

15 **Electromagnetic induction occurs when magnetic flux through a loop**

- A stays constant
- B changes
- C is zero always
- D points north

Understand It with Pulse | Flag a mistake

16 **A transformer works only with**

- A alternating current
- B no current
- C direct current
- D static charge

Understand It with Pulse | Flag a mistake

17 **A 120 V outlet supplies 0.5 A. The power is**

- **A** 240 W
- **B** 120.5 W
- **C** 119.5 W
- **D** 60 W

Understand It with Pulse | Flag a mistake

18 **A 6 V battery across 2 Ω gives a current, in amperes, of ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A current of 5 A through 4 Ω gives a voltage, in volts, of ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **Resistors of 10 Ω and 10 Ω in parallel give an equivalent resistance, in ohms, of _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **A 9 V battery drives 3 A. The power, in watts, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A charge of 4 C moves through 10 V. The energy, in joules, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **The unit of electric current is the**

A volt

B ohm

C coulomb

D ampere

Understand It with Pulse | Flag a mistake

24 **Increasing resistance at fixed voltage will**

A increase current

B leave current unchanged

C decrease current

D reverse current

Understand It with Pulse | Flag a mistake

25 **A current carrying conductor produces a magnetic field that circles the**

A wire

B switch

C resistor

D battery

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. C
2. D
3. A
4. B
5. A
6. D
7. C
8. B
9. D
10. A
11. D
12. D
13. B
14. D
15. B
16. A
17. D
18. 3
19. 20
20. 5
21. 27
22. 40
23. D
24. C
25. A

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