NOVA SCOTIA ADVANCED PHYSICS 12 · UNIT D · 25 QUESTIONS

Fields, 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 potential difference of 100 volts acts across plates 0.5 metres apart. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A potential difference of 200 volts acts across plates 0.2 metres apart. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A potential difference of 50 volts acts across plates 0.25 metres apart. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **Two charges attract with force 10 newtons. If one charge doubles and distance halves, the new force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **Two charges attract with force 5 newtons. If one charge doubles and distance halves, the new force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Two charges attract with force 20 newtons. If one charge doubles and distance halves, the new force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A 12 volt battery drives a current of 2 amperes through a circuit. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A 24 volt battery drives a current of 3 amperes through a circuit. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A 20 volt battery drives a current of 4 amperes through a circuit. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A current of 2 amperes flows through a resistor of 10 ohms. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A current of 3 amperes flows through a resistor of 4 ohms. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A current of 5 amperes flows through a resistor of 2 ohms. The power dissipated, in watts, is**

ANSWER

Understand It with Pulse | Flag a mistake

13 **A transformer has 1000 primary turns and 100 secondary turns. A primary voltage of 120 volts gives a secondary voltage, in volts, of**

ANSWER

Understand It with Pulse | Flag a mistake

14 **A transformer has 500 primary turns and 1000 secondary turns. A primary voltage of 20 volts gives a secondary voltage, in volts, of**

ANSWER

Understand It with Pulse | Flag a mistake

15 **A transformer has 200 primary turns and 400 secondary turns. A primary voltage of 30 volts gives a secondary voltage, in volts, of**

ANSWER

Understand It with Pulse | Flag a mistake

16 **A coil of 100 turns experiences a flux change of 0.2 webers in 2 seconds. The induced emf, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **A coil of 50 turns experiences a flux change of 0.4 webers in 1 seconds. The induced emf, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A coil of 200 turns experiences a flux change of 0.1 webers in 4 seconds. The induced emf, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **The electric potential at a point is the work done per unit charge in bringing a positive charge from**

A infinity

B the negative plate

C the ground

D another charge

Understand It with Pulse | Flag a mistake

20 **A capacitor stores energy in its**

A magnetic field

B electric field

C plates as mass

D wires

Understand It with Pulse | Flag a mistake

21 **The time constant of a resistor-capacitor circuit is the product of**

- A voltage and current
- B charge and time
- C resistance and capacitance
- D power and energy

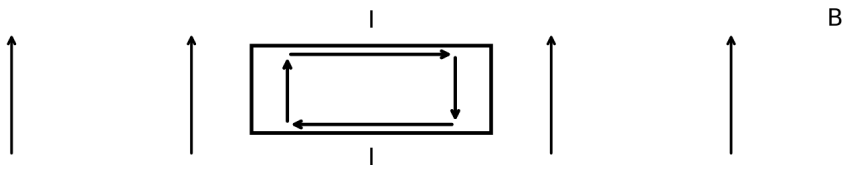
Understand It with Pulse | Flag a mistake

22 **Magnetic flux is measured in**

- A teslas
- B henries
- C volts
- D webers

Understand It with Pulse | Flag a mistake

23 **The diagram shows a rectangular coil in a magnetic field. The magnetic force on the bottom side of the coil points**



- **A** Into the page
- **B** Out of the page
- **C** Up
- **D** Down

Understand It with Pulse | Flag a mistake

24 **In a transformer the primary and secondary coils are linked by**

- **A** direct wires
- **B** magnetic flux in the core
- **C** electric current
- **D** sound

Understand It with Pulse | Flag a mistake

25

Eddy currents are reduced in transformer cores by using

A thicker wire

B higher voltage

C laminated sheets

D more turns

Understand It with Pulse

Flag a mistake

ANSWER KEY

1.	200	**10.**	40	**19.**	A
2.	1000	**11.**	36	**20.**	B
3.	200	**12.**	50	**21.**	C
4.	80	**13.**	12	**22.**	D
5.	40	**14.**	40	**23.**	A
6.	160	**15.**	60	**24.**	B
7.	6	**16.**	10	**25.**	C
8.	8	**17.**	20		
9.	5	**18.**	5		

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