BRITISH COLUMBIA PHYSICS 12 (MPH--12) · UNIT C · 25 QUESTIONS

Electrostatics and Electric Fields — 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 **An oil drop carries a charge of 3.2×10^{-19} C. Using $e = 1.6 \times 10^{-19}$ C, the number of elementary charges on it is**

- A 1
- B 2
- C 3
- D 4

Understand It with Pulse | Flag a mistake

2 **Two charges of 2×10^{-6} C and 3×10^{-6} C are 0.1 m apart. Using $k = 9.0 \times 10^{9}$ N m squared per C squared, the force between them, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **If one charge in a pair is doubled and all else stays the same, the electric force between them becomes**

- A twice as large
- B four times as large
- C one half as large
- D unchanged

Understand It with Pulse | Flag a mistake

4 **If the distance between two charges is doubled, the electric force between them becomes**

- A twice as large
- B four times as large
- C one quarter as large
- D one half as large

Understand It with Pulse | Flag a mistake

5 **A force of 0.6 N acts on a charge of 0.02 C. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A point charge of 2×10^{-6} C is 0.1 m from a point. Using $k = 9.0 \times 10^{9}$ N m squared per C squared, the field strength there, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **Work of 12 J moves a charge of 3 C between two points. The potential difference, in volts, is**

ANSWER _____

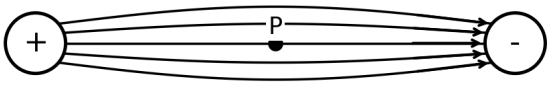
Understand It with Pulse | Flag a mistake

8 **The electric field around an isolated positive charge points**

- A toward the charge
- B away from the charge
- C in a circle around it
- D only upward

Understand It with Pulse | Flag a mistake

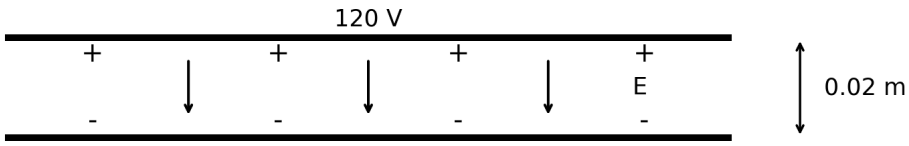
9 **The diagram shows field lines between a positive charge on the left and a negative charge on the right. The field direction at point P is**



- A to the left
- B to the right
- C upward
- D downward

Understand It with Pulse | Flag a mistake

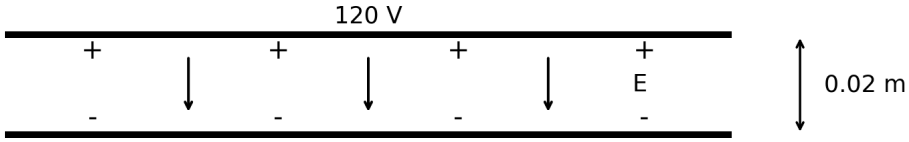
10 **The diagram shows two parallel plates with a voltage of 120 V and a separation of 0.02 m. The field strength between the plates, in volts per metre, is**



ANSWER

Understand It with Pulse | Flag a mistake

11 **The diagram shows parallel plates with the positive plate on top and the negative plate below. The force on a positive charge between the plates points**



A upward

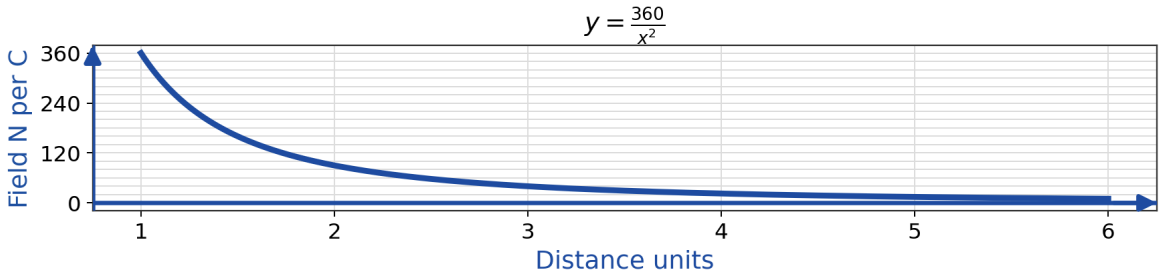
B downward

C to the left

D to the right

Understand It with Pulse | Flag a mistake

12 **The graph shows electric field strength against distance with E = 360 / distance² . At a distance of 3 units , the field , in newtons per coulomb , is**



A 20

B 40

C 120

D 360

Understand It with Pulse | Flag a mistake

13 **Which of the following charges cannot occur on a small object, if charge comes in multiples of 1.6×10^{-19} C**

- **A** 1.6×10^{-19} C
- **B** 3.2×10^{-19} C
- **C** 2.4×10^{-19} C
- **D** 4.8×10^{-19} C

Understand It with Pulse | Flag a mistake

14 **A charge of 2 C is at a potential of 12 V. Its electric potential energy, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A charge of 0.5 C moves through a potential difference of 20 V. The work done, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Where electric field lines are closest together, the field is**

A strongest

B weakest

C zero

D changing direction

Understand It with Pulse | Flag a mistake

17 **The electric field around an isolated negative charge points**

A toward the charge

B away from the charge

C in a circle around it

D only downward

Understand It with Pulse | Flag a mistake

18 **When two neutral objects are rubbed together, the total electric charge of the pair**

A stays zero

B becomes positive

C becomes negative

D disappears

Understand It with Pulse | Flag a mistake

19 **In an insulator, electric charges**

A move freely

B are largely fixed in place

C are always positive

D vanish when heated

Understand It with Pulse | Flag a mistake

20 Two balloons with the same sign of charge



A attract

B repel

C have no effect

D cancel out

Understand It with Pulse | Flag a mistake

21 **A force of 20 N acts on a charge of 4 C. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A point charge of 1×10^{-6} C is 0.3 m from a point. Using $k = 9.0 \times 10^{9}$ N m squared per C squared, the potential there, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **Field lines leave a charge in all directions. The charge is**

A positive

B negative

C neutral

D grounded

Understand It with Pulse | Flag a mistake

24 **If one charge is doubled and the other is tripled, the electric force between them becomes**

A twice as large

B three times as large

C six times as large

D unchanged

Understand It with Pulse | Flag a mistake

25 **A negative charge placed in an electric field experiences a force**

A in the field direction

B opposite to the field direction

C at right angles to the field

D of zero

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. 5.4
3. A
4. C
5. 30
6. 1800000
7. 4
8. B
9. B
10. 6000
11. B
12. B
13. C
14. 24
15. 10
16. A
17. A
18. A
19. B
20. B
21. 5
22. 30000
23. A
24. C
25. B

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