Electricity and Electrical Energy - Set I

Phys Sci

Name _____ Class _____ Date _____

1 What is the approximate **electrostatic force** between two protons separated by a distance of **1.0×10^{-6} meter**?

A 2.3×10^{-16} N and repulsive
B 2.3×10^{-16} N and attractive
C 9.0×10^{21} N and repulsive
D 9.0×10^{21} N and attractive

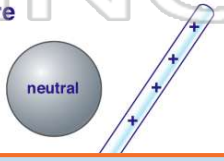
2 What is the **total** electrical energy used by a 1500-watt hair dryer operating for 6.0 minutes?

A 4.2 J
B 250 J
C 9.0×10^{3} J
D 5.4×10^{5} J

3 Moving 2.5×10^{-6} coulomb of **charge** from point *A* to point *B* in an electric field requires 6.3×10^{-4} joule of **work**. The **potential difference** between points *A* and *B* is approximately

A 1.6×10^{-9} V
B 4.0×10^{-3} V

4 When a **neutral** metal sphere is charged by contact with a **positively charged** glass rod, the **sphere**



A loses electrons
B gains electrons
C loses protons

5

7

C J•s
D J/s

A F/4
B 2F
C F/2
D 4F

9 If 4.8×10^{-17} **joule** of work is required to move an electron between two points in an electric field, what is the **electric potential difference** between these points?

A 1.6×10^{-19} V
B 4.8×10^{-17} V
C 3.0×10^{2} V
D 4.8×10^{2} V

10 An object with a net charge of 4.80×10^{-6} coulomb experiences an **electrostatic force** having a magnitude of 6.00×10^{-2} newton when placed near a **negatively** charged metal sphere. What is the **electric field strength** at this location?

A 1.25×10^{4} N/C directed away from the sphere
B 1.25×10^{4} N/C directed toward the sphere
C 2.88×10^{-8} N/C directed away from the sphere
D 2.88×10^{-8} N/C directed toward the sphere

Phys Sci

ANSWER KEY

What is the approximate **electrostatic force** between two protons separated by a distance of **1.0×10^{-6} meter**?

A 2.3×10^{-16} N and repulsive
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C 9.0×10^{21} N and repulsive
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a

What is the **total** electrical energy used by a 1500-watt hair dryer operating for 6.0 minutes?

A 4.2 J
B 250 J
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D 5.4×10^{5} J

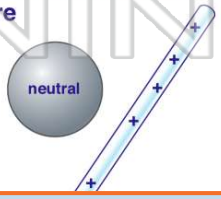
d

Moving 2.5×10^{-6} coulomb of **charge** from point *A* to point *B* in an electric field requires 6.3×10^{-4} joule of **work**. The **potential difference** between points *A* and *B* is approximately

A 1.6×10^{-9} V
B 4.0×10^{-3} V
C 2.5×10^{2} V

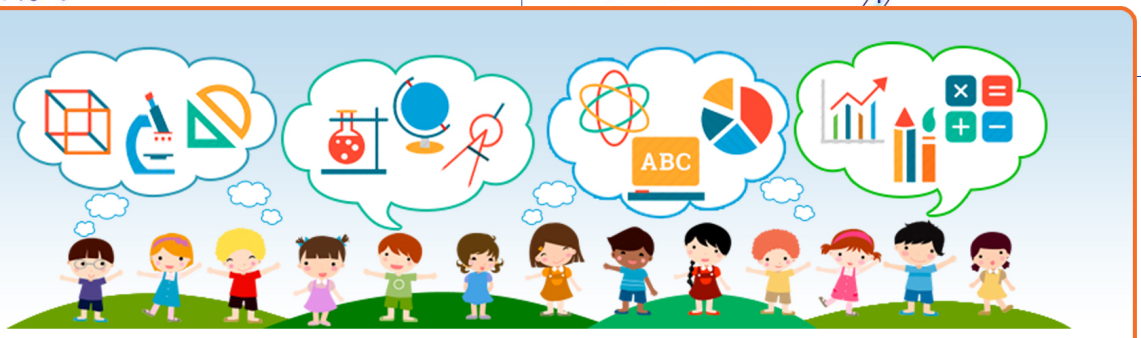
c

When a **neutral** metal sphere is charged by contact with a **positively charged** glass rod, the **sphere**



A loses electrons
B gains electrons
C loses protons
D gains protons

a



B 2F
C F/2
D 4F

If 4.8×10^{-17} **joule** of work is required to move an electron between two points in an electric field, what is the **electric potential difference** between these points?

A 1.6×10^{-19} V
B 4.8×10^{-17} V
C 3.0×10^{2} V
D 4.8×10^{2} V

c

An object with a net charge of 4.80×10^{-6} coulomb experiences an **electrostatic force** having a magnitude of 6.00×10^{-2} newton when placed near a **negatively** charged metal sphere. What is the **electric field strength** at this location?

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B 1.25×10^{4} N/C directed toward the sphere
C 2.88×10^{-8} N/C directed away from the sphere
D 2.88×10^{-8} N/C directed toward the sphere

b