PracTest - Electrostatics

1. To give a negative charge to an object,
   A. protons must be added to it
   B. protons must be removed from it
   C. electrons must be added to it
   D. electrons must be removed from it
   E. neutrons must be added to it
   F. neutrons must be removed from it

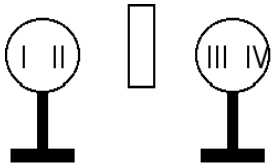
2. Just a reminder: do not write on this test. Consider charged objects A, B, C, D, E and F. If A attracts B and B repels C and C attracts D, and D repels E, and E attracts F, how will A react to F?
   A. attraction B. repulsion C. no net effect

Consider spheres A, B, and C. A and B are conductors, and C is an insulator. Initially, all spheres are neutral and have equal masses.

3. A is given a positive charge, B is given a negative charge. Which object now has more mass?
   A. A B. B C. Same for both

4. B and C are given equal positive charges, then a person touches both B and C. Which object now has more mass?
   A. Same for both B. B C. C

A charged rod is placed between two conducting spheres as shown.



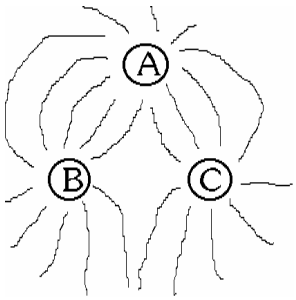
5. If region II is negative, the rod is
   A. positive B. negative C. could be either pos. or neg.

Consider two objects with the following initial conditions. The charge on each is +q, the distance between them is R, and the electric force acting between them is F.

6. If the distance between the objects were halved, the force between them would be
   A. F/16 C. F/4 E. F G. 4F
   B. F/8 D. F/2 F. 2F H. 8F

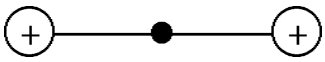
7. If the charge on both objects were doubled and the distance between the objects were halved, the force between them would be
   A. F/8 C. F/2 E. 2F G. 8F
   B. F/4 D. F F. 4F H. 16F

8. Objects A, B, and C are charged objects immersed in an insulating liquid. Grass seeds or threads float on the surface of the liquid.



Suppose charge A is positive. What are the charges on B and C?
A. B is positive and C is positive.
B. B is positive and C is negative.
C. B is negative and C is positive.
D. B is negative and C is negative.
E. This picture is not possible! Three charges cannot produce this pattern.

Two positive spherical charges (white) have a length of thread stretched between them as shown. The black bead on the thread is charged and is at equilibrium in the position shown.The spherical charges cannot move; the thread is taut and will not flex. The bead can move only along the thread.



9. If the bead carries a negative charge, it is in
A. stable equilibrium B. unstable equilibrium C. neutral equilibrium

10. Electrons can move about freely in this type of material
A. Insulators ONLY C. BOTH conductors and insulators
B. Conductors ONLY D. NEITHER conductors nor insulators

11. Cannot become positively charged
A. Insulators ONLY C. BOTH conductors and insulators
B. Conductors ONLY D. NEITHER conductors nor insulators

12. If charged, a brief touch will not neutralize it
A. Insulators ONLY C. BOTH conductors and insulators
B. Conductors ONLY D. NEITHER conductors nor insulators

13. [Blues for a Red Planet] At what resolution is it first apparent that intelligent beings live on Earth?
A. km (1000 m) B. 100 m C. 10 m D. 1 m

14. [Blues for a Red Planet] The Martian air is _?_.
A. about as dense as ours C. both of these
B. made mostly of carbon dioxide D. none of these

15. [x Raging Planet: Lightning] As more and more water freezes to ice crystals rising in a cloud, the crystals grow to become _?_.
A. sleet B. snowflakes C. ice cubes D. hailstones E. glaciers

16. [Raging Planet: Lightning] On average, lightning kills one in every _?_ people it strikes.
A. 3 B. 6 C. 9 D. 20 E. 100

17. [CPA-Electrostatics] Which force (or forces) can both attract and repel?
A. gravitational
B. electrical
C. both gravitational & electrical
D. neither gravitational nor electrical

18. [CPA-Electrostatics] Which force holds protons and neutrons together in the nucleus?
A. gravitational force
B. electrical force
C. magnetic force
D. nuclear strong force
E. nuclear weak force
F. no force is needed

PracTest - Electrostatics
Answer Section

MULTIPLE CHOICE

1.	**ANS: C**	**TOP: Conductors and Insulators**		**NOT: PracTest**
2.	**ANS: A**	**TOP: Attract or Repel**		**NOT: PracTest**
3.	**ANS: B**	**TOP: Touch Discharge Mass**		**NOT: PracTest**
4.	**ANS: B**	**TOP: Touch Discharge Mass**		**NOT: PracTest**
5.	**ANS: A**	**TOP: Dipoles**	**NOT: PracTest**	
6.	**ANS: G**	**TOP: Coulomb Proportions**		**NOT: PracTest**
7.	**ANS: H**	**TOP: Coulomb Proportions**		**NOT: PracTest**
8.	**ANS: D**	**TOP: Electric Field**		**NOT: PracTest**
9.	**ANS: B**	**TOP: Electric Field Equilibrium**		**NOT: PracTest**
10.	**ANS: B**	**TOP: Conductors and Insulators**		**NOT: PracTest**
11.	**ANS: D**	**TOP: Conductors and Insulators**		**NOT: PracTest**
12.	**ANS: A**	**TOP: Conductors and Insulators**		**NOT: PracTest**
13.	**ANS: B**	**TOP: Blues for a Red Planet**		
14.	**ANS: B**	**TOP: Blues for a Red Planet**		
15.	**ANS: D**	**TOP: Raging Planet: Lightning**		
16.	**ANS: B**	**TOP: Raging Planet: Lightning**		
17.	**ANS: B**	**TOP: 32. Electrostatics**		
18.	**ANS: D**	**TOP: 32. Electrostatics**		