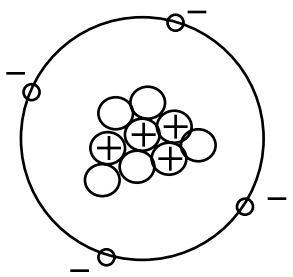
Electricity : Test-40

1) Name the three particles which are found in all atoms.

2) Which of the three particles can be removed from the atom?

3) Give the number of each of the particles in a beryllium atom.



protons _____

neutrons _____

electrons _____

beryllium atom

4) What is static electricity?

5) A glass rod is rubbed with silk.

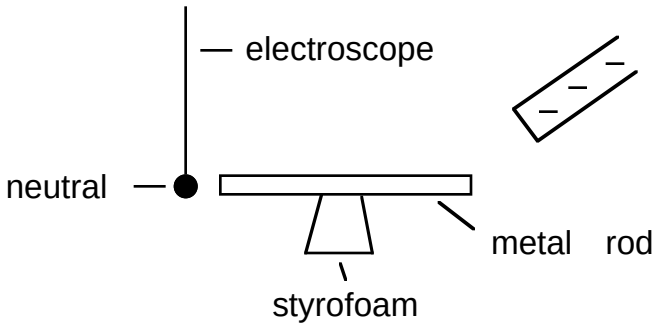
a) The charge on the rod is _____ .

b) The charge on the silk is _____ .

c) Which is more attractive to electrons; glass or silk?

6) Which device is used to detect static electricity?

7) Explain what happens to the neutral styrofoam ball when the negatively charged vinyl strip approaches the metal rod.



8) What is current electricity?

9) What is a conductor?

10) State whether the following are conductors (c) or insulators (i).

a) copper b) plastic c) wood

d) graphite e) tungsten f) styrofoam

11) What are the two most important ways to produce current electricity?

12) What is a circuit?

13) One coulomb of electrons equals 6.24×10^{18} electrons. 8.5 coulombs = _____ electrons.

14) If 162 coulombs flow in a circuit in 36 seconds, the current is _____ amps.

15) If the current in a circuit is 4.0 amps, the number of coulombs that will flow in 22 seconds is _____ coulombs.

16) If 126 joules are delivered to 7.0 coulombs of electrons by a battery, then the voltage of the battery is _____ volts.

17) A light bulb has a resistance of 15 ohms. The voltage across the bulb is 3.0 volts.

a) The current is _____ amps

b) The power is _____ watts

c) How many seconds are required for 5.0 coulombs to flow through the bulb? _____ seconds.

Answers: 1) protons, neutrons and electrons, 2) electrons, 3) 4, 5, 4, 4) It is electricity that is not moving., 5)a) positive, b) negative, c) silk, 6) electroscope, 7) Electrons move to the left end of the metal rod. The neutral ball is attracted to the rod and touches it becoming negatively charged. It is then repelled by the negatively charged left end of the rod., 8) It is electricity that is moving., 9) It is a material that allows electrons to move through it easily., 10)a) c, b) i, c) i, d) c, e) c, f) i, 11) cells (or batteries) and generators, 12) It is a complete path or loop for electrons to flow., 13) 5.3×10^{19}, 14) 4.5, 15) 88, 16) 18, 17)a) 0.20, b) 0.60, c) 25.