

HOMEWORK PROBLEMS:

2a. What evidence showed the particles in the cathode-ray tube were negatively charged?

Answer:

When the “light beam” passed over the positive end of a magnet, the beam of light bent toward the magnet. When the magnet was flipped over (the negative end up), the light beam was deflected away from the magnet.

2b. Suppose that two beams pass between a pair of oppositely charged plates. One of the beams is composed of electrons, and the other is composed of protons. Will the two beams bend in the same direction or in opposite directions? Why?

Answer:

Opposite directions. The beam, with protons, will go toward the negative plate. Where the beam, with electrons, will go toward the positive plate.

2c. What main feature of Dalton's atomic model was abandoned after Thomson's discoveries?

Answer:

Dalton’s model that the atom was a dense “ball” (with no sub-atomic particles) was revised into Thomson’s model of a “hollow ball” with protons and electrons – similar to a “plum pudding pie”.