

8. 11 Electromagnetic Forces

Reading Science

1. Millikan and Harvey set out to measure—
 - A. the diameter of oil droplets under an electric force.
 - B. the value of the elementary charge.
 - C. the force of gravity on oil.
 - D. the viscosity of air at various temperatures.
2. If the top metal plate is negatively charged, what is the charge of the droplets that will be attracted to it?
 - A. Negative
 - B. Neutral or no charge
 - C. Positive
 - D. Either negative or positive, depends on the droplet size
3. If a droplet has three extra electrons, what is its measured charge?
 - A. 1/3 of an elementary charge
 - B. 1 elementary charge
 - C. 2 elementary charges
 - D. 3 elementary charges
4. In paragraph 3, evaporation of oil from droplets during the experiment is a potential source of—
 - A. excess charges.
 - B. neutral drops.
 - C. error.
 - D. gravity.
5. Which of the following may be an example of conformity bias?
 - A. Biologists announcing the existence of a new class of mammals
 - B. Chemists using a novel computer program to design cancer drugs
 - C. Stanley Prusinger insisting that prions are a new way to transmit infections
 - D. Physicists dismissing numbers that differ significantly from their previous findings as errors
6. The search for fractionally charged particles has—
 - A. measured more than 100 million droplets and found no partially charged droplets.
 - B. reanalyzed Millikan and Fletcher's data and found less than 1% fractionally charged droplets.
 - C. been denounced by leading physicists as not necessary.
 - D. been discontinued due to numerous errors in the experiment.