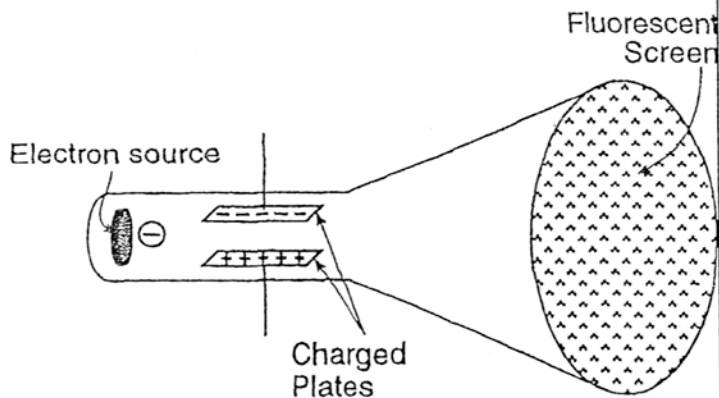


Electrostatics Practice

36. The diagram below shows an evacuated cathode ray tube consisting of a source of electrons at one end, a fluorescent screen at the other end, and a pair of oppositely charged parallel plates in between.



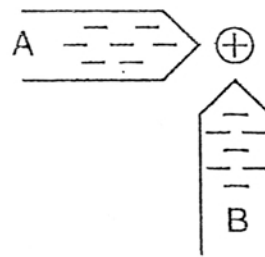
Which diagram best represents the motion of the electron beam in the tube as it passes between the oppositely charged plates?

- (1) (2)
- (3) (4)

37. A metallic sphere is positively charged. The field at the center of the sphere due to this positive charge is

- (1) positive
 (2) negative
 (3) zero
 (4) dependent on the magnitude of the charge

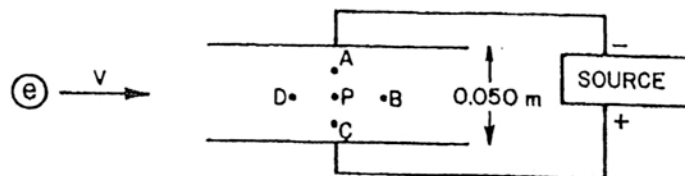
38. Two plastic rods, *A* and *B*, each possess a net negative charge of 1.0×10^{-3} coulomb. The rods and a positively charged sphere are positioned as shown below.



Which vector best represents the resultant electrostatic force on the sphere?

- (1) (2) (3) (4)

Base your answers to questions 39 and 40 on the diagram below which represents two large parallel conducting plates charged to a potential of 10. volts. The plates are separated by a distance of 0.050 meter.



39. If an electron were projected into the electric field with a velocity v , it would experience a deflection
- (1) into the page
 (2) out of the page
 (3) toward the top of the page
 (4) toward the bottom of the page
40. The magnitude of the electric field intensity at point *P* is
- (1) 20. N/C
 (2) 2.0 N/C
 (3) 20×10^3 N/C
 (4) 2.0×10^2 N/C