Chapter-24

1. Two point charges Q1 = +5.00 nC and Q2 = 23.00 nC are separated by 35.0 cm. (a) What is the electric potential at a point midway between the charges? (b) What is the potential energy of the pair of charges? What is the ignificance of the algebraic sign of your answer?

Ans:

1. **Review.** Two insulating spheres have radii *r*1 and *r*2, masses *m1* and *m*2, and uniformly distributed charges -*q*1 and *q*2. They are released from rest when their centers are separated by a distance *d.* (a) How fast is each moving when they collide? (b) **What If?** If the spheres were conductors, would their speeds be greater or less than those calculated in part (a)? Explain.

Ans:

1. A spherical conductor has a radius of 14.0 cm and a charge of 26.0 *µ*C. Calculate the electric field and the electric potential at (a) *r* = 10.0 cm, (b) *r* = 20.0 cm, and (c) *r* = 14.0 cm from the center.

Ans: