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Question 454

A 40 micro-C charge is positioned on the x axis at $x = 4.0$ cm. In order to produce a net electric field of zero at the origin, where, on the x-axis, should a -60 micro-C charge be placed?

- (a) 5.7 cm
- (b) 4.9 cm
- (c) -6.0 cm
- (d) -5.3 cm
- (e) 6.0 cm

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■.31-25%

Question 455

Four charges are placed on the circumference of a circle of radius 1.0 m and centered at the origin as shown in Figure 2. What is the magnitude and direction of the electric field at the origin (0,0)?

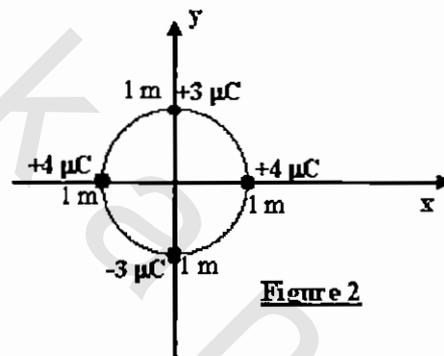


Figure 2

- (a) 72000 N/C along the positive x-axis
- (b) 54000 N/C along the negative y-axis
- (c) 54000 N/C along the positive y-axis
- (d) Zero
- (e) 72000 N/C along the negative x-axis

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Question 456

Four electric charges are arranged so that the total electric field at the origin is zero. Which configuration in figure (1) would achieve this?

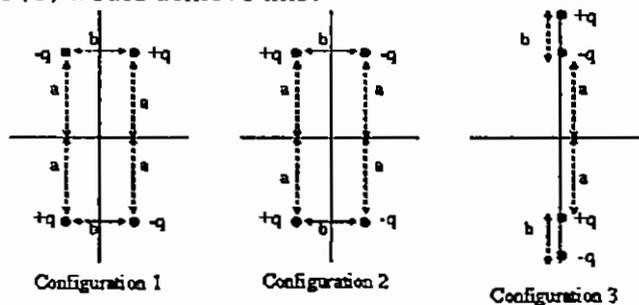


Figure 1

- (a) All configurations.
- (b) Configuration 1.
- (c) Neither configuration.
- (d) Configuration 3.
- (e) Configurations 1 and 2.

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Question 457

A charged particle has a mass of 2.0×10^{-4} kg. If it is held stationary by a downward 300 N/C electric field, the charge of the particle is:

- (a) -1.5×10^{-6} C.
- (b) -6.5×10^{-6} C.
- (c) 6.5×10^{-6} C.
- (d) 1.5×10^{-6} C.
- (e) -3.0×10^{-6} C.

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Question 458

Two uniformly charged, concentric and hollow, spheres have radii r and $1.5r$. The charge of the inner sphere is $q/2$ and that on the outer sphere is $3q/2$. Find the electric field at a distance $2.0r$ from the center of the spheres.

- (a) $0.5kq/(r^2)$.
- (b) $0.25kq/(r^2)$.
- (c) $0.35kq/(r^2)$.
- (d) Zero.
- (e) $0.13kq/(r^2)$.

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0.43-74%

Question 459

For the arrangement of charges shown in figure (1), the electric field at the point P is:

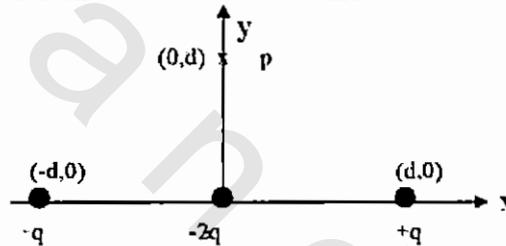


Figure 1

- (a) Zero.
- (b) $1.3kq/(d^2)$ in the positive y-direction.
- (c) $2.0kq/(d^2)$ in the negative y-direction.
- (d) $2.0kq/(d^2)$ in the positive y-direction.
- (e) $1.3kq/(d^2)$ in the negative y-direction.

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Question 460

In figure (4), what is the magnitude of the electric field at point P due to the four point charges shown?

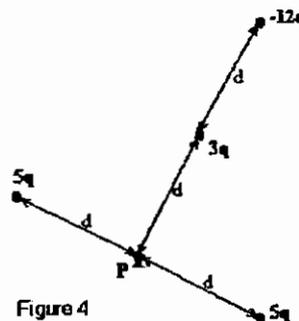


Figure 4

- (a) $q\sqrt{2}$ N/C.
- (b) $90q$ N/C.
- (c) zero
- (d) $5q$ N/C.
- (e) $12q$ N/C.

Question 464

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0.34-51%

In figure (4), what is the magnitude of the electric field at point P, center of the equilateral triangle? [take $d = 2$ m, $q = 10^{*-}(-9)$ C]

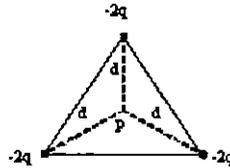


Figure (4)

- (a) 22 N/C.
- (b) 18 N/C.
- (c) Zero.
- (d) 9 N/C.
- (e) 11 N/C.

Question 465

23-04
0.50-66%

In figure 4, a 0.3 g metallic ball hangs from an insulating string in a vertical electric field of 4000 N/C directed upward as shown. If the tension in the string is 0.005 N, then the charge on the ball is:

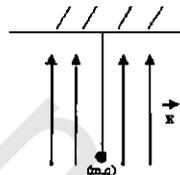


Figure 4

- (a) 0.73 micro-C
- (b) -0.73 micro-C
- (c) 0.52 micro-C
- (d) -0.52 micro-C
- (e) -1.3 micro-C

Question 466

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0.16-60%

In figure 5, four charges are placed on the circumference of a circle of diameter 2 m. If an electron is placed at the center of the circle, then the electron will [Take $Q = 60$ micro-C, $q = 20$ micro-C]

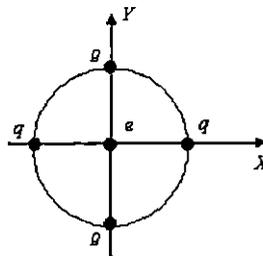


Figure 5

- (a) move to the left.
- (b) move to the right.
- (c) move downward.
- (d) stay at the center.
- (e) move upward.

Question 46723-04
0.46-48%

At which point can the electric field due to the two charges shown in figure 6 be zero?



Figure 6

- (a) point D.
- (b) point C.
- (c) point A.
- (d) point B.
- (e) point E.

Question 46823-04
0.45-32%

The electric field 20 mm from a certain point charge has a magnitude $|E|$. The magnitude of the electric field 10 mm from the point charge is

- (a) $4.0*|E|$.
- (b) $6.0*|E|$.
- (c) $2.0*|E|$.
- (d) $1.5*|E|$.
- (e) zero.

Question 46923-04
0.47-53%

A charge of +20.0 micro-Coulomb is located at the origin and a charge of +15.0 micro-Coulomb is located at $x = +10.0$ cm. At what point on the x-axis, other than infinity, is the electric field zero?

- (a) $x = -5.36$ cm
- (b) $x = +5.36$ cm
- (c) $x = +4.64$ cm
- (d) $x = -74.6$ cm
- (e) $x = +74.6$ cm

Question 47023-04
0.40-34%

A +40-micro-Coulomb charge is positioned on the x axis at $x = +4.0$ cm. To produce a net electric field of zero at the origin, where should a -60 micro-Coulomb charge be placed?

- (a) $x = +4.9$ cm
- (b) $x = +6.0$ cm
- (c) $x = -6.0$ cm
- (d) $x = +5.7$ cm
- (e) $x = -5.3$ cm

Question 47123-04
0.45-31%

The electric field produced by a +3.0 C charge at a point 1000 m to the left of the charge is

- (a) $3.0*10^{**4}$ N/C toward the left.
- (b) $1.7*10^{**7}$ N/C toward the left.
- (c) $2.7*10^{**4}$ N/C toward the right.
- (d) $2.7*10^{**4}$ N/C toward the left.
- (e) $3.0*10^{**4}$ N/C toward the right.