

Question 573

25-05
0.31-19%

Consider a metallic sphere carrying a charge of 4.0×10^{-8} C and having a potential of 400 V. Find the diameter of the sphere.

- (a) 3.6 m.
- (b) 6.0 m.
- (c) 4.2 m.
- (d) 1.8 m.
- (e) 1.2 m.

Question 574

25-05
0.44-38%

If an isolated metal sphere of radius $r = 10$ cm has a net charge of 4.0 micro-C. What is the potential on the surface of the sphere? [Consider $V = 0$ at infinity]

- (a) 4.2×10^5 V.
- (b) -4.2×10^6 V.
- (c) 3.6×10^5 V.
- (d) zero.
- (e) 3.6×10^6 V.

25-6 Potential Due to a Group of Point Charges

25-06

Question 575

In Figure (2), if $Q = 4.0 \times 10^{-9}$ C, what is the potential difference $V(A) - V(B)$?

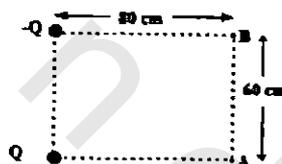


Figure # 2

- (a) 22 V.
- (b) 12 V.
- (c) 18 V.
- (d) 09 V.
- (e) 27 V.

25-06

Question 576

Two point charges Q_1 and Q_2 are positioned as shown in Figure(2). If $Q_1 = 2.0 \times 10^{-9}$ C, $Q_2 = -2.0 \times 10^{-9}$ C, $a = 3.0$ m, and $b = 4.0$ m, what is the electric potential difference, $V_A - V_B$?

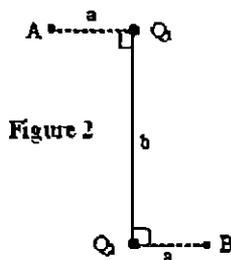


Figure 2

- (a) -4.8 V
- (b) 8.4 V
- (c) 4.8 V
- (d) -8.4 V
- (e) -6.0 V

25-06

0.54-54%

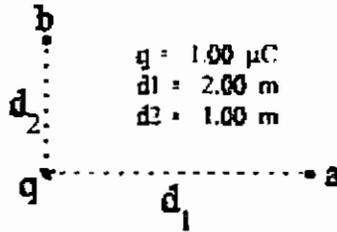
Question 577Consider the configuration shown in figure 2. What is $V_a - V_b$?

FIGURE 2

- (a) - 13.5 kV
 (b) + 6.75 kV
 (c) + 4.50 kV
 (d) - 4.50 kV
 (e) + 13.5 kV

25-06

0.63-50%

Question 578

In figure 6, point P is at the center of the square. Find the net electric potential at point P.
 Assume $V = 0$ at infinity.

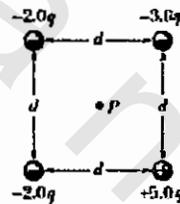


Figure 6

- (a) - 2.8 kq/d
 (b) + 2.8 kq/d
 (c) zero
 (d) + 1.4 kq/d
 (e) - 1.4 kq/d

25-06

1.49-58%

Question 579

In figure (7), what is the net potential at point P due to the four point charges if $V = 0$ at infinity ? [take $d = 2 \text{ cm}$, $q = 1.0 \text{ micro-C}$].

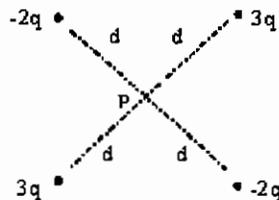


Figure (7)

- (a) $-4.6 \cdot 10^{**7} \text{ V}$.
 (b) $-9.0 \cdot 10^{**5} \text{ V}$.
 (c) $9.0 \cdot 10^{**5} \text{ V}$.
 (d) Zero.
 (e) $4.6 \cdot 10^{**7} \text{ V}$.

Quest on 58025-06
0.54-62%

Find the electrostatic potential at $x = 0$ for the following distribution of charges: $-2q$ at $x = 10$ cm and $-2q$ at $x = -10$ cm. [Take $q = 1.0 \times 10^{-9}$ C, and the electrostatic potential at infinity = 0]

- (a) -180 V.
- (b) -360 V.
- (c) zero.
- (d) 360 V.
- (e) 180 V.

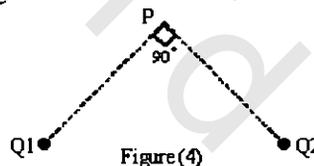
Quest on 58125-06
0.51-21%

Two charged particles lie on the x axis as follows: a $+70.0$ nano-Coulomb at $x = -7.00$ m and a -107 nano-Coulomb at $x = -3.00$ m. What is the electric potential at the origin? ($V = 0$ at infinity)

- (a) +276 V
- (b) +131 V
- (c) -350 V
- (d) -231 V
- (e) +456 V

Question 58225-06
0.36-73%

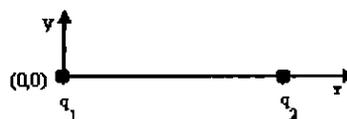
In figure 4, the point charge Q_1 causes an electric potential of 60 V and an electric field strength of 30 V/m at P, and the point charge Q_2 , separately, causes an electric potential of 120 V and electric field strength of 40 V/m at P. Which of the following gives possible values of potential and field strength at P due to the joint action of Q_1 and Q_2 ?



- (a) -600 V, 10 V/m.
- (b) 135 V, 50 V/m.
- (c) 180 V, 50 V/m.
- (d) 135 V, 70 V/m.
- (e) 180 V, 70 V/m.

Question 58325-06
0.39-54%

Two charges, $q_1 = +2.0$ micro-C and $q_2 = -2.0$ micro-C, are placed as shown in figure 2. At the midpoint between the charges, which one of the following statements correctly describes the electric field (E.F.) and the electric potential (E.P.)? [electric potential at infinity = 0]



- (a) E.F. is directed toward q_2 and the E.P. is negative.
- (b) E.F. is directed toward q_1 and the E.P. is zero.
- (c) E.F. is directed toward q_2 and the E.P. is positive.
- (d) E.F. is directed toward q_1 and the E.P. is negative.
- (e) E.F. is directed toward q_2 and the E.P. is zero.