

## 23-3 Electric Field Lines

23-03

Question 450

Which one of the following statements is CORRECT?

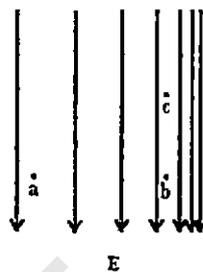
- (a) Electric charge is not quantized.
- (b) Electric field lines are closer together when the electric field is weak, and are far apart when the electric field is strong.
- (c) Halfway between two point charges of equal magnitude and opposite sign, the net electric field is zero.
- (d) In a solid conductor, electrons do not move freely.
- (e) The direction of an electric field does not change whether a positive or negative test charge is used in calculating the electric field.

23-03

0.34-36%

Question 451

The strength of the electric field shown in Figure 3

**Figure 3**

- (a) increases as we go from point a to point b.
- (b) increases as we go from point c to point b.
- (c) increases as we go from point b to point a.
- (d) is the same at points a, b and c.
- (e) increases as we go from point b to point c.

## 23-4 The Electric field Due to a Point Charge

23-04

0.49-54%

Question 452A 32 micro-C charge is positioned on the x-axis at  $x = 4.0$  cm. Where should a -18 micro-C charge be placed (on the x-axis) so that the net electric field at the origin is zero?

- (a) 1 cm
- (b) 4 cm
- (c) 5 cm
- (d) 3 cm
- (e) 7 cm

23-04

Question 453

A point charge of 4.0 nano-C is located at a point having coordinates (30.0 cm, 40.0 cm). At what point will the electric field be 72 N/C and pointing in the negative y-direction?

- (a) (10.0, -89.9) cm
- (b) (30.0, 49.9) cm
- (c) (30.0, -30.7) cm
- (d) (30.0, 70.7) cm
- (e) (30.0, -49.9) cm