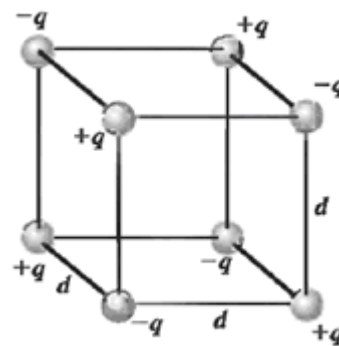


KC's Multiple Select Problems

Electric Fields

1. A metal soda can is electrically polarized. Which of the following statements are true regarding this situation.
 - (a) The can would experience a net force in a uniform electric field.
 - (b) The can would experience a net force in a non-uniform electric field.
 - (c) Since the can has equal amounts of positive and negative charge it produces no net electric field.
 - (d) The can produces a net electric field.
 - (e) The can has lost electrons and thus it's mass has decreased.
 - (f) The can has gained electrons and thus it's mass has increased.
2. A tiny charged pellet of mass m is suspended at rest by the electric field between two horizontal, charged metallic plates. The lower plate has a positive charge and the upper plate has a negative charge. Which of the following statements are false?
 - (a) The electric field between the plates points vertically upward.
 - (b) The pellet is negatively charged.
 - (c) The magnitude of the electric force on the pellet is equal to mg .
 - (d) If the magnitude of charge on the plates is increased, the pellet begins to move upward.
3. Consider 8 charges of equal magnitude, one on each corner of a cube, as shown in the figure. Which of the following statements about the center of the cube are true?
 - (a) The electric field is non-zero.
 - (b) The electric field is zero.
 - (c) The electric potential is zero.
 - (d) The electric potential is positive.
 - (e) The electric potential is negative.



4. Three charges and their net electric field lines are shown in the diagram. Which of the following statements are true?
 - (a) Q_1 is positive, Q_2 is positive, and Q_3 is negative.
 - (b) Q_1 is positive, Q_2 is negative, and Q_3 is positive.
 - (c) Q_1 is negative, Q_2 is positive, and Q_3 is negative.
 - (d) The field is that of a dipole.

