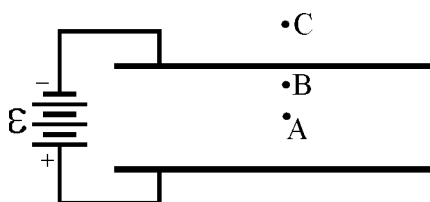


1. When a voltage  $V$  is applied to a parallel-plate capacitor, it produces an electric field of magnitude  $E$ . A second parallel plate capacitor has plates with half the area and twice the separation. What is the magnitude of the electric field in the second capacitor when a voltage  $V$  is applied to it?

A)  $\frac{1}{4}E$   
 B)  $\frac{1}{2}E$   
 C)  $E$   
 D)  $2E$   
 E)  $4E$

Base your answers to questions 2 and 3 on the diagram below which shows two large parallel conducting plates connected to a battery of emf  $\mathcal{E}$ .

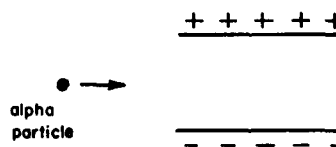


2. What is magnitude and direction of the electric field at point C?
- A) Equal in magnitude to the electric field at point A, and in the same direction.  
 B) Equal in magnitude to the electric field at point A, but in the opposite direction.  
 C) Greater in magnitude to the electric field at point A, and in the same direction.  
 D) Greater in magnitude to the electric field at point A, but in the opposite direction.  
 E) Zero.





3. In which direction would an electron placed at point B accelerate?

A) towards the top of the page  
 B) towards the bottom of the page  
 C) towards the right  
 D) towards the left  
 E) it would not accelerate

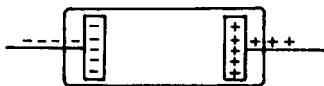
4. A moving alpha particle enters the space between two oppositely charged plates as indicated in the diagram below.



Which arrow best represents the path of the alpha particle as it travels between the plates?

- A)   
 B)   
 C)   
 D)   
 E) none of the above

5. The diagram below represents oppositely charged plates in an evacuated glass tube.



Which diagram below represents the path of free electrons between the charged plates?

- A)
- B)
- C)
- D)
- E) None of the above

6. If the potential difference between two oppositely charged parallel metal plates is doubled, the electric field intensity at a point between them is

- A) quartered
- B) halved
- C) unchanged
- D) doubled
- E) quadrupled

**Answer Key**  
**Definition of Capacitance MC Questions [Mar 28, 2011]**

1.   A
  2.   E
  3.   B
  4.   C
  5.   A
  6.   D
-

Name \_\_\_\_\_

Class \_\_\_\_\_

Date \_\_\_\_\_

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_