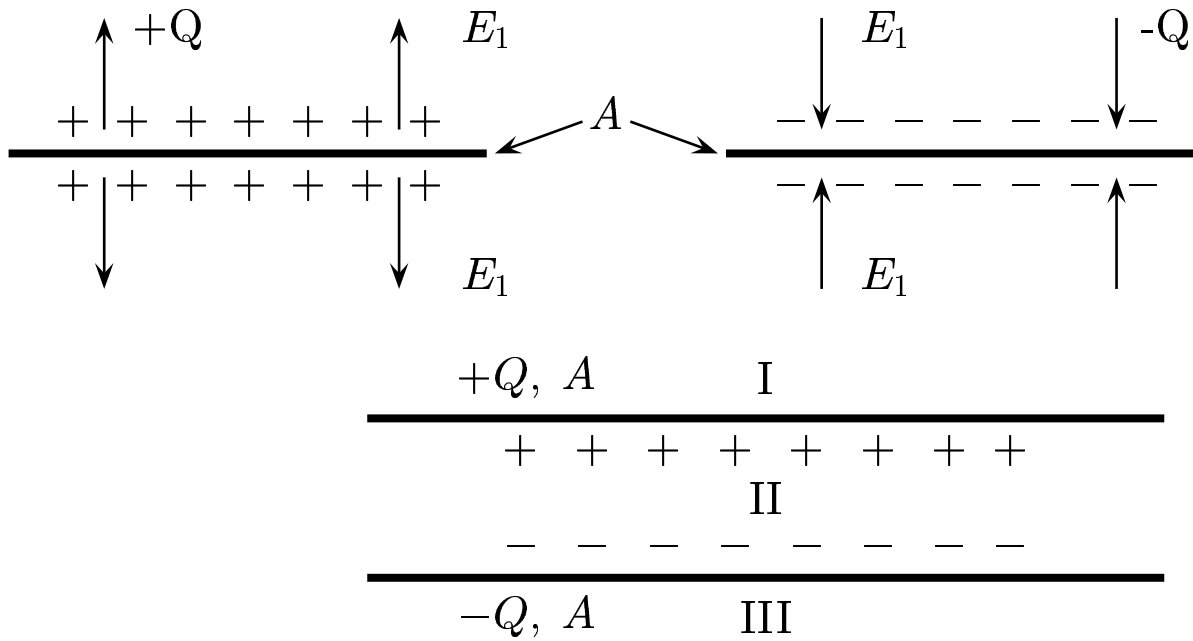


Given 1-plate pattern,  $E_1 = \frac{Q}{2 \epsilon_0 A}$ :



Find electric fields  $E$  of parallel plate system in I, II and III.

- A)  $E_I = 0$  and  $E_{II} = 2 E_1 \downarrow$  and  $E_{III} = 0$ .  
 B)  $E_I = E_1 \uparrow$  and  $E_{II} = 2 E_1 \uparrow$  and  $E_{III} = E_1 \downarrow$ .  
 C)  $E_I = E_1 \uparrow$  and  $E_{II} = E_1 \uparrow$  and  $E_{III} = E_1 \downarrow$ .

Apply the superposition principle

	Top plate	Bottom plate	Both plates
$E_I$	$+E_1$	$-E_1$	0
$E_{II}$	$-E_1$	$-E_1$	$-2 E_1$
$E_{III}$	$-E_1$	$+E_1$	0

Answer **A**.

26.02-05 One Plate vs Two Plates 2004-3-24