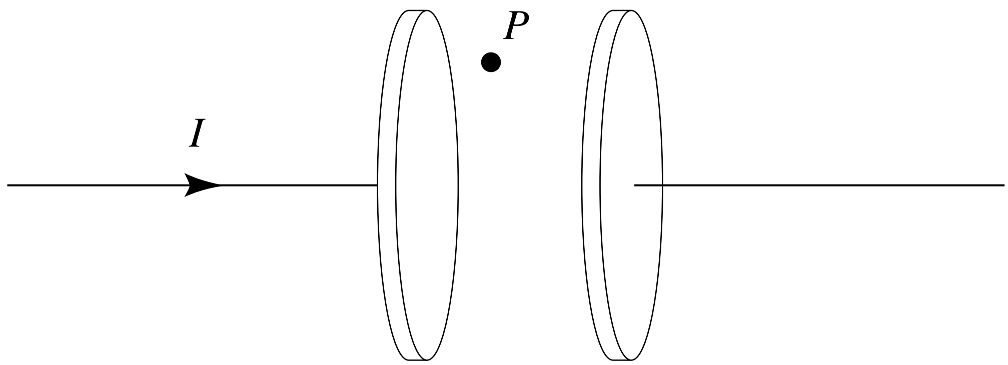
As the capacitor shown below is charged with a constant current I, at point P there is a



1. constant electric field.
2. changing electric field.
3. constant magnetic field.
4. changing magnetic field.
5. changing electric field and a magnetic field.
6. changing magnetic field and an electric field.
7. none of the above.

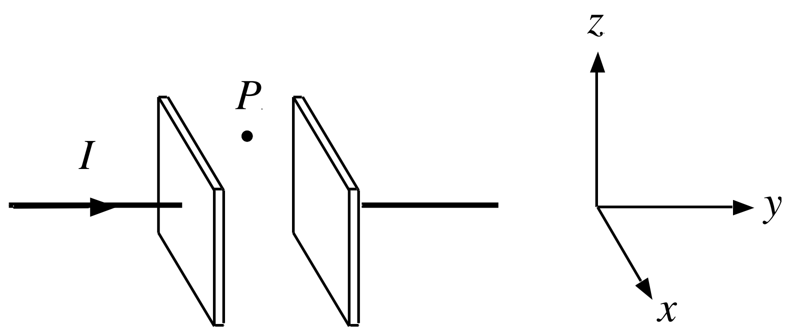
A planar electromagnetic wave is propagating through space. Its electric field vector is given by $\mathbf{E} = E_o \cos(kz - \omega t)\mathbf{x}$. Its magnetic field vector is

1. $\mathbf{B} = (E_o/ c)\cos(kz - \omega t)\mathbf{y}$
2. $\mathbf{B} = (E_o/ c) \cos(ky - \omega t)\mathbf{z}$
3. $\mathbf{B} = (E_o/ c) \cos(ky - \omega t)\mathbf{y}$
4. $\mathbf{B} = (E_o / c)\cos(kz - \omega t)\mathbf{z}$

Which of the following produce a changing E-field?

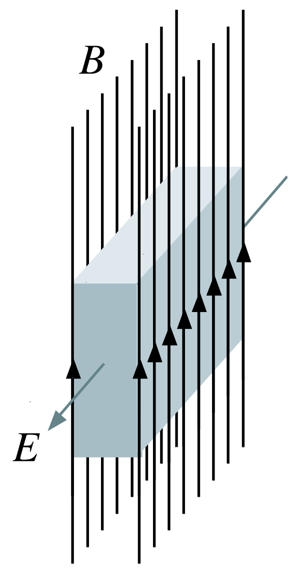
1. a charging capacitor
2. a steadily changing B-field
3. any object whose charge is changing
4. none of the above

A capacitor is charged by a steady current *I*. In which direction is the magnetic field at point *P* halfway between the top of the plates?



1. The *B*-field at point *P* is zero.
2. +*x*
3. -*x*
4. +*y*
5. -*y*
6. +*z*
7. -*z*
8. Other direction.

Someone shows you this "snapshot" of a magnetic and electric field pattern formed by a wave pulse. From the picture you conclude that the pulse



1. had to travel to the right.
2. had to travel to the left.
3. had to travel either left or right.
4. could really have traveled in any direction.
5. 5. could not have existed.

You are 20km from the transmitter of a radio station. The electric field part of this radio wave has a max value of E_m at this point. You relocated to 40km away from the transmitter, the max value of the electric field is now

1. $2E_m$
2. E_m
3. $E_m/2$
4. $E_m/4$