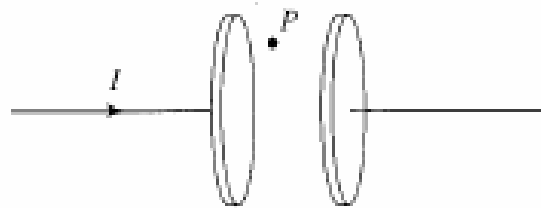As the capacitor shown below is charged with a constant current I, at point P there is a

1. constant electric field.
2. changing electric field.
3. constant magnetic field.
4. changing magnetic field.
5. changing electric field and a magnetic field.

For a charging capacitor, the total displacement current between the plates is equal to the total conduction current I in the wires. The capacitors in the diagram have circular plates of radius R. In (a), points A and B are each a distance $d > R$ away from the line through the centers of the plates; in this case the magnetic field at A due to the conduction current is the same as that at B due to the displacement current. In (b), points P and Q are each a distance $r < R$ away from the center line. Compared with the magnetic field at P, that at Q is

(a)

(b)
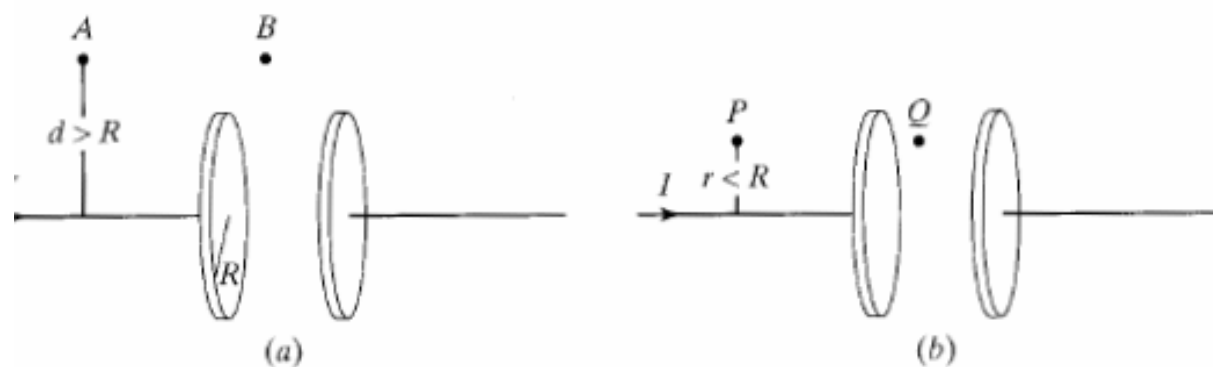
1. bigger.
2. smaller.
3. the same.
4. need more information.