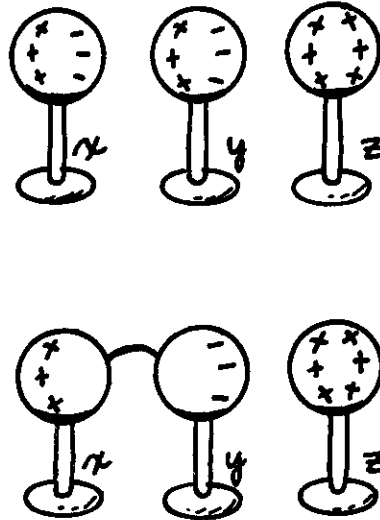


## ANSWER: UNDER THE INFLUENCE

The answer is: d. The trick to this thing is to see the world in a slightly different way. True, X and Y are uncharged, but that does not mean that they do not have charge on them. They each have equal amounts of plus and minus mixed so the gross effect is zero charge. But then Z comes on the scene with its plus charge. Though Z never touches X or Y they are nevertheless under the influence of plus Z. The minus charges in X and Y are drawn towards Z. The plus charges in X and Y are repelled from Z. So one side of X becomes



plus, the other side of X becomes minus. The same for Y. This split is called electrostatic polarization. When a wire is run from the minus side of X to the plus side of Y the minus charges on X can get still closer to Z, and the plus charges on Y can get farther from Z. So the minus on X moves to Y and the plus on Y moves to X. But that leaves a net plus on X and a net minus on Y. This process is called charging by electrostatic induction. It is important to note that no electric charge was created. True, ball X became plus, but ball Y became minus by exactly the same amount so the net effect is zero. What happened is that charge was separated.