Two initially uncharged conductors $X$ and $Y$, are mounted on insulating stands and are in contact, as shown below.

A negatively charged rod is brought near but does not touch them.

With the rod held in place, conductor $Y$ is moved to the right by pushing its stand, so that the conductors are separated. Finally, the rod is removed.

What is the sign of the net charge on $X$?

A) negative
B) positive
C) neutral
D) negative or neutral
E) positive or neutral
Because the negatively charged rod is held near the conductor \(X\), the electrons in the conductor tend to be pushed away from the rod, which will make the conductor \(Y\) negatively charged.

When we separate the two conductors, the conductor \(Y\) will remain negatively charged even when the rod is removed.

The sum of the charges on \(X\) and \(Y\) is zero, therefore the conductor \(X\) must be positively charged.

Answer B.

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