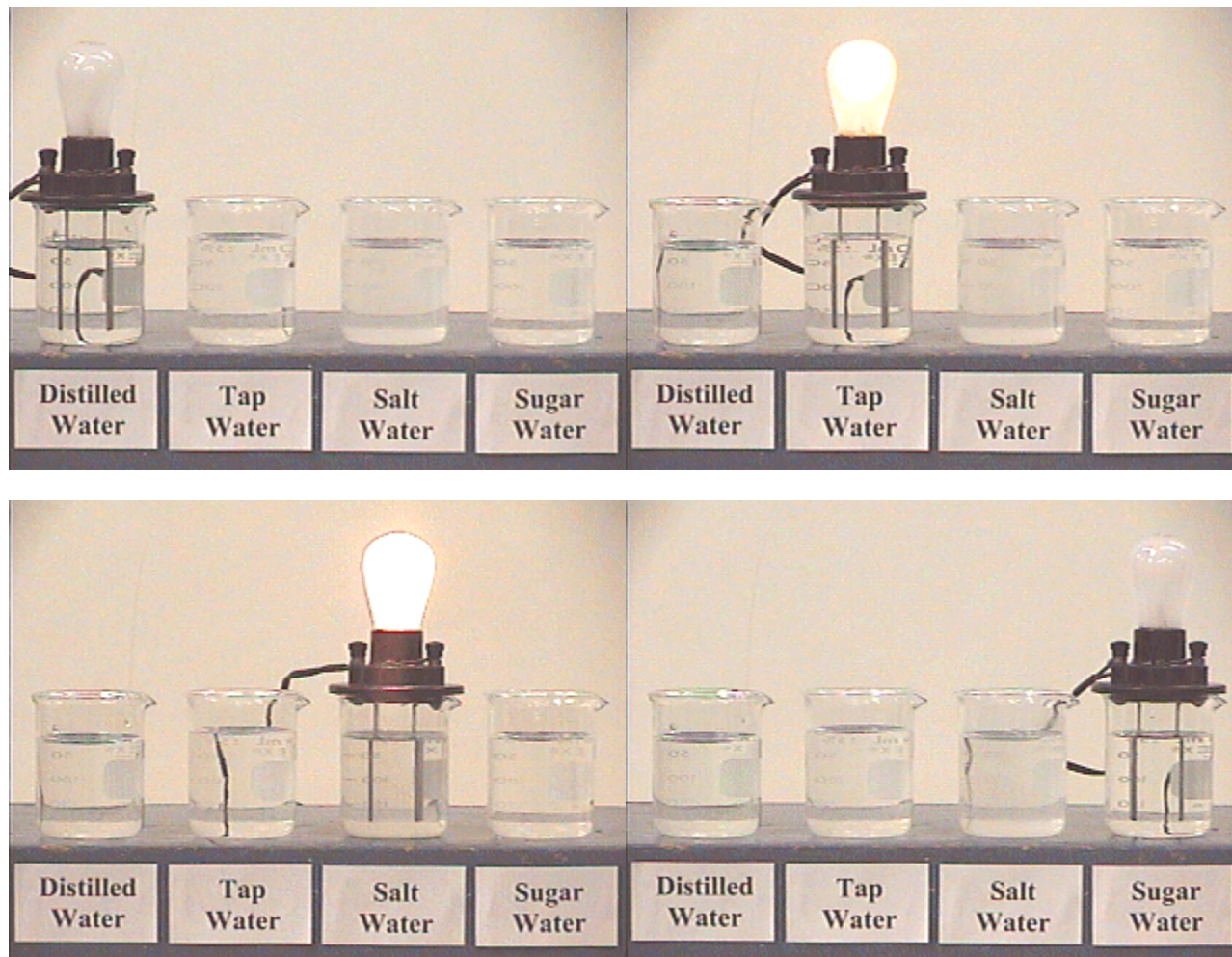


## Answer #191

The answer is, in order of increasing conductivity: (a) distilled water, and upper left and (d) sugar water, lower right, tied for least, (b) tap water, upper right, and (c) salt water, lower left, as can be seen in the four photographs below.



Note that the tap water in suburban Washington, DC clearly contains a lot of ionized materials, because it is nearly as bright as the salt water! (*Pure* (distilled) water contains no ions, only non-ionic water molecules.) On the other hand, the sugar water is totally dark, as is the distilled water. Salt is said to be an "electrolyte," while sugar is a "non-electrolyte," meaning that sugar is a substance whose solution in water does not contain ions, and will therefore not conduct electric current.

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