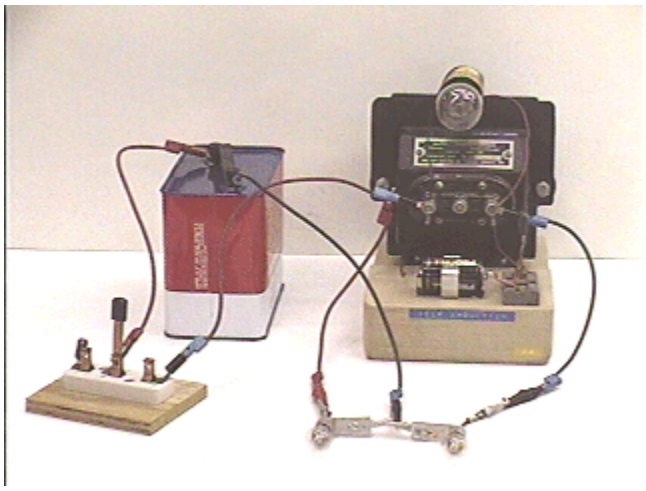
Answer #90

The answers are: (a) the bulb at the left will go on faster than the bulb at the right, and (d) both bulbs will remain on after a long time (but not so long that the battery drains completely). This can be seen in an mpeg video by clicking your mouse on the photograph below.



The inductor delays the current in that branch of the circuit, causing a delay in the lamp at the left becoming fully lit. Current continues to flow in both loops of the circuit for as long as the switch remains closed. Notice that because of the resistance of the inductor coil the bulb in series with the inductor is slightly less bright in the steady state than the bulb wired directly across the battery.

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For questions and comments regarding the *Question of the Week* contact
Dr. Richard E. Berg by e-mail or using phone number or regular mail address
given on the Lecture-Demonstration Home Page.