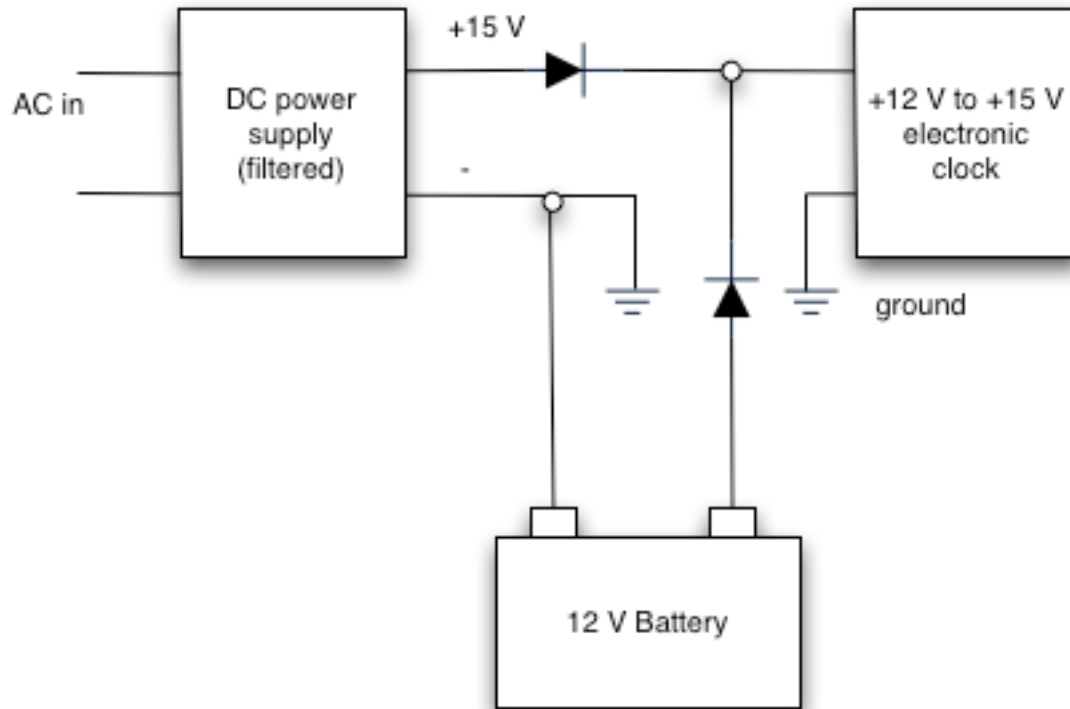


## Problem HH 1.29

A useful application of diodes is to pass the higher of two voltages without affecting the lower. An example of this is battery backup, a method of keeping something running (e.g. a precision electronic clock) that must not stop when there is a power failure. The figure below indicates a circuit that does the job. The battery does nothing until the power fails; then it takes over without interruption.



Make a simple modification to the circuit so that the battery is charged by the dc supply (when power is on, of course) at a current of 10 mA (such a circuit is necessary to maintain the battery's charge).