

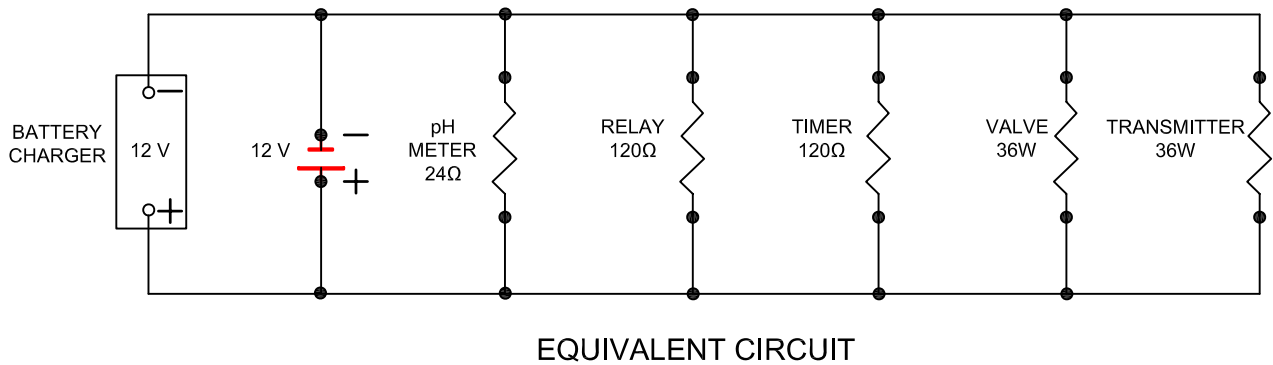
**SACRAMENTO SOUTHERN RAILROAD
RECERTIFICATION EXAMINATION
DC CIRCUITS TRAINING**

EXAMPLE PROBLEM 1 - CONTINUED FROM PAGE 6

1B. - Draw an equivalent circuit of this control system at this moment in time:

Analysis:

According to our answer to question 1A there are five devices consuming power at this moment in time and two potential sources of that power. The five devices are: pH meter, relay, time delay relay, transmitter and a pneumatic valve. The two potential sources of power are the battery charger and the battery (actually a bank of batteries in series). Since all the devices consuming power are receiving their power from the battery charger and maybe the battery, and since the charger and battery are wired in parallel, then the devices consuming power are also wired in parallel with them. We, therefore, can draw the circuit as a simple parallel circuit with seven devices; two providing power and five consuming power:



The equivalent circuit shows all the various components connected to the system in parallel which provides a very simple way to analyze the circuit further if you wanted to know the amount of power being consumed, for example

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