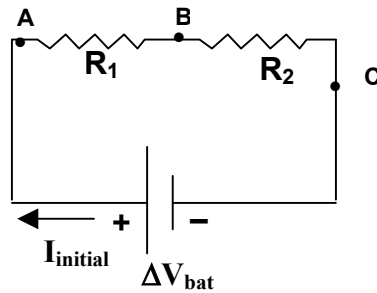


Physics 112
Quiz #15
October 18, 1999

Name: _____

6 QUESTIONS; 2 POINTS EACH. TOTAL: 12 POINTS
NO EXTRA CREDIT OPTION ON THIS QUIZ

All questions refer to this diagram (Assume that the potential at the negative terminal of the battery is 0 volts):



All answers must be expressed in terms of these four quantities only: I_{initial} , ΔV_{bat} , R_1 and R_2 .
Examples of possible answers: $2I_{\text{initial}}$; $\Delta V_{\text{bat}} + I_{\text{initial}}R_2$; $I_{\text{initial}} - \Delta V_{\text{bat}}/R_1$; etc.

1. How much current flows past point B?

2. What is the potential at point A?

3. What is the potential at point B?

4. What is the potential at point C? *Note: "0 volts" is not an acceptable answer to this question.*

5. If the two resistors are replaced by a *single* resistor R , where $R = R_1 + R_2$, how much current will flow out of the battery?

6. If the two resistors are replaced by a single resistor R_{new} , where $R_{\text{new}} = 2(R_1 + R_2)$,
 - i) how much current will flow out of the battery?

 - ii) is this current greater than, less than, or equal to I_{initial} ?