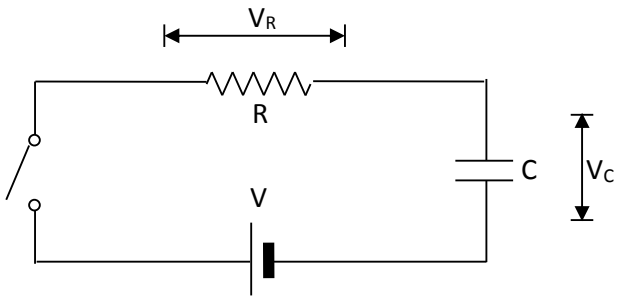
Name: _____

PHY 232 Summer 2016 Class Work

Class 22. RC Circuit

PART A.



If Q is the charge stored in the capacitor and I is the current from the battery. Switch is closed at t=0.

(a) What is the value of the following quantities at t=0 (in terms of V, R, and C):

Q = _____ I = _____ V_C= _____ V_R= _____

(b) What is the value of the following quantities at t=∞ (in terms of V, R, and C):

Q = _____ I = _____ V_C= _____ V_R= _____

(c) Write down the following quantities as a function of time (in terms of V, R, C, and t):

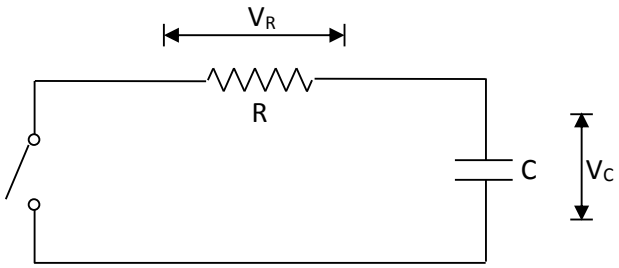
Q(t) = _____

I (t) = _____

V_C(t) = _____

V_R(t) = _____

PART B.



If Q is the charge stored in the capacitor and I is the current through R. The capacitor is originally charged with a charge of Q_0. Switch is closed at t=0.

(a) What is the value of the following quantities at t=0 (in terms of V, R, and Q_0):

Q = _____ I = _____ V_C= _____ V_R= _____

(b) What is the value of the following quantities at t=∞ (in terms of V, R, and Q_0):

Q = _____ I = _____ V_C= _____ V_R= _____

(c) Write down the following quantities as a function of time (in terms of V, R, Q_0 and t):

Q(t) = _____

I (t) = _____

V_C(t) = _____

V_R(t) = _____