

name _____

ID# _____

Experiment 5
Capacitors in DC Circuits

Resistor value _____

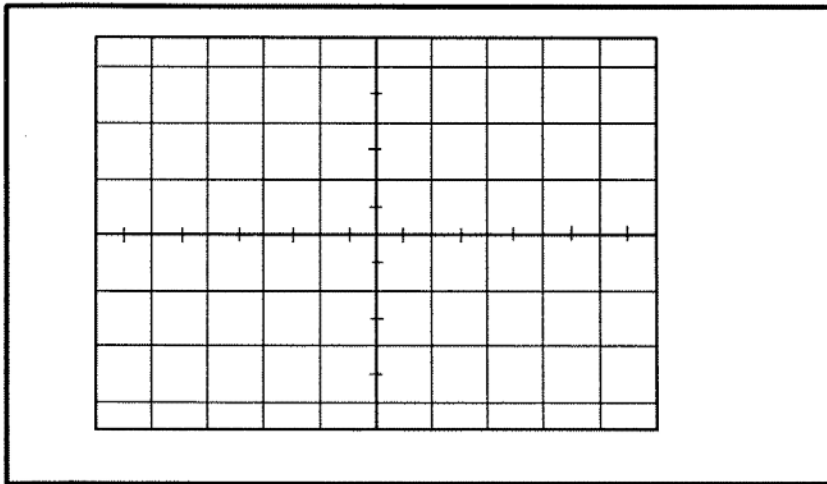
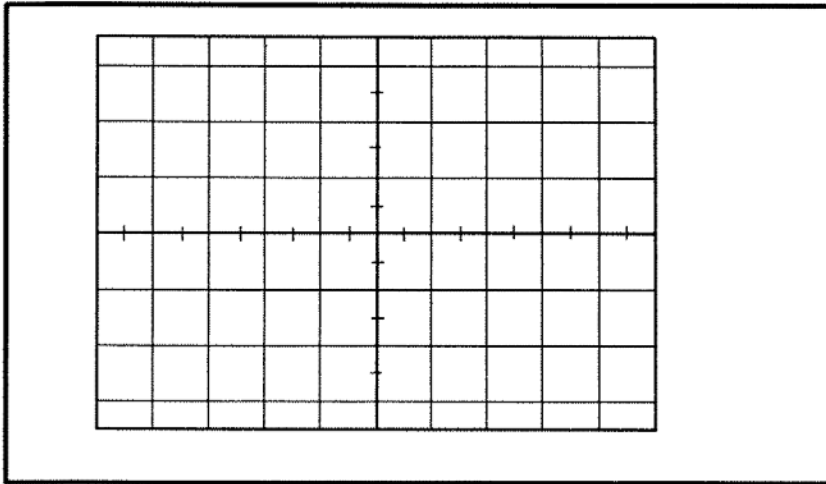
.1 μF capacitor
value _____

Power supply
voltage _____

.5 μF capacitor
value _____

time	.1 μF V_m	.5 mF V_m

Draw what you observe on the 'scope screen:



Analysis

$R_m =$ _____

RC for the $0.1 \mu\text{F}$ capacitor = _____

RC for the $0.5 \mu\text{F}$ capacitor = _____

Equations and sample calculations calculations:

(10 points)

Capacitors are used where one wants a lot of charge available in a hurry. List some appliances that you would expect to use capacitors. Exactly what part does the capacitor play in each?

Questions

1. Did the capacitor with the larger RC have a flatter or steeper decay curve? (2 points)
2. How did the trace change for the circuit from Figure 2 as the frequency increased? (3 points)
3. How did the relative voltages change across the resistor and capacitor as the frequency increased for the circuit from Figure 3? (2 points)
4. How much charge was stored in the $.5\mu\text{F}$ capacitor when it was fully charged at 50 Volts? If capacitor fully discharges in 1 second, what is the average current? (3 points)