

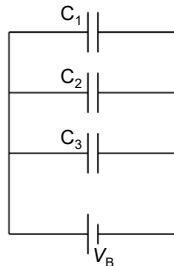
Example: A parallel plate capacitor with capacitance C_0 is fully charged with a battery with potential difference V_0 . Determine Q_0 , the charge on the capacitor.

Example: A parallel plate capacitor with capacitance C_0 is fully charged with a battery with potential difference V_0 . The distance between the plates is changed.

- How does the capacitance change?
- How does the potential difference change?
- How does the charge change?

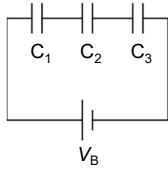
Capacitors in Circuits

Consider capacitors connected in parallel.



Capacitors in Circuits

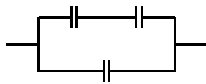
Consider capacitors connected in series.



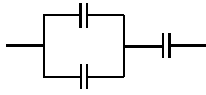
Capacitors in Circuits

	Parallel	Series
Capacitance	$C_T = \sum C_i$	$\frac{1}{C_T} = \sum \frac{1}{C_i}$
Potential Difference	$V_T = V_i$	$V_T = \sum V_i$
Charge	$Q_T = \sum Q_i$	$Q_T = Q_i$

Example: Three identical capacitors with capacitance, C, are connected as illustrated. Determine the total capacitance of the combination.



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Example: For the capacitor system shown, $C_1 = 3C$, $C_2 = C$ and $C_3 = 2C$.

- Find the equivalent capacitance.
- Find the charge on each capacitor

(From Exam I, Fall 2017)

