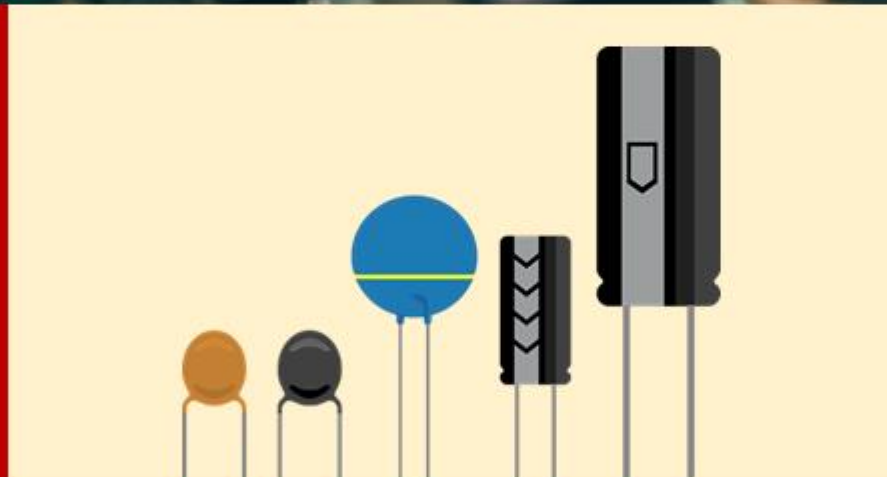




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Capacitor Questions

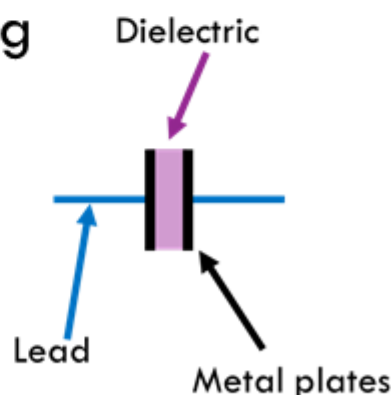
Question # 1

Explain the basic construction?

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A capacitor comprises of two conductors (plates) that are separated by using an insulator.

In its basic form (A parallel-plate capacitor) it contains two metal plates that are separated by a nonconducting material. This non-conducting material is referred as a dielectric.



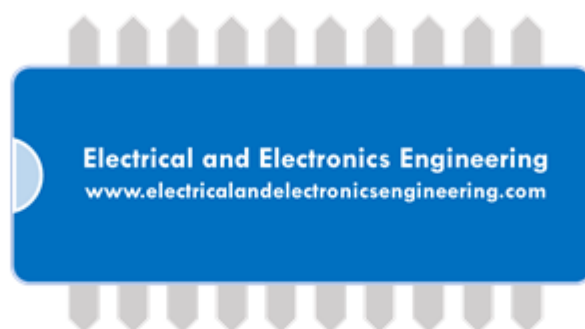
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Question # 2

Mention some materials that can be used as dielectric?



The dielectric used in capacitors can be:

1. Air
2. Ceramic
3. Mica
4. Oil
5. Plastic

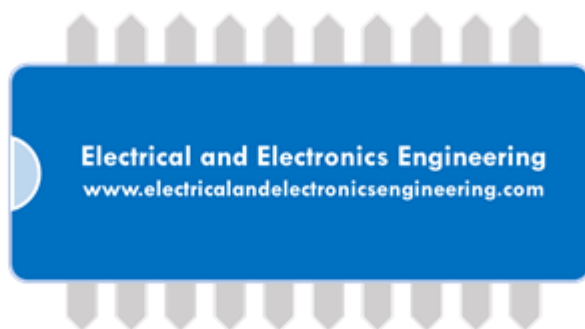
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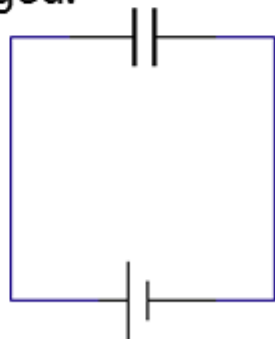
Question # 3

Explain the process of charging capacitors?



Let's consider a dc source connected across capacitor, electrons are pulled from the left plate of capacitor by the positive potential of the battery. After traveling they are deposited on the right plate of capacitor. This process creates deficiency of electrons on left plate and excess of electrons on right plate.

Once charge is completely transferred no current can pass through the dielectric (insulator) between the plates. At this stage the capacitor is charged.



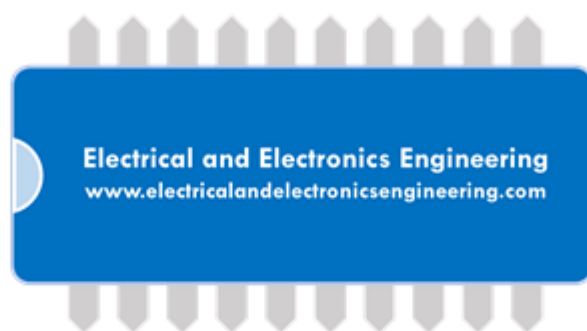
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Question # 4

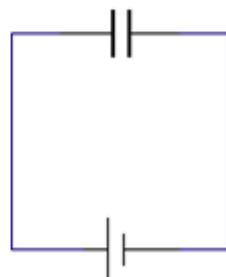
How capacitor stores charge?



Reconsider the previous question. Once capacitor is charged, let's consider that we disconnect the dc power source. Doing so will cause the electrons that were moved to the right plate to stay on left plate.

The removal of electrons from right plate already developed the positive charge: deficiency of electrons.

As a result of this all the capacitor remains charged with voltage (that is same as source voltage) across it even though no source is present.



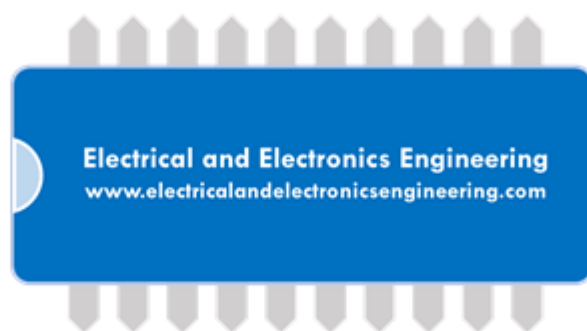
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Question # 5

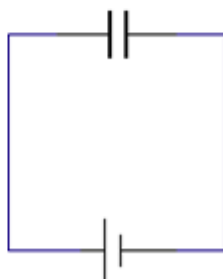
Why Capacitor is open circuit to DC



Let's consider a capacitor that is connected to a DC source. When the voltage and current values of capacitor reach their final state and stop charging this is the stage when capacitor obtains steady state.

At this stage the source voltage and capacitor voltage are equal. As a result there is no current flow through circuit.

At this steady stage DC a capacitor looks like open circuit.



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