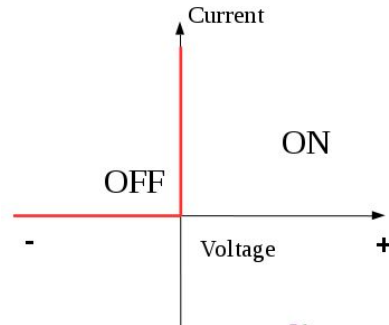


Worksheet 6 – MM2EMD Diodes

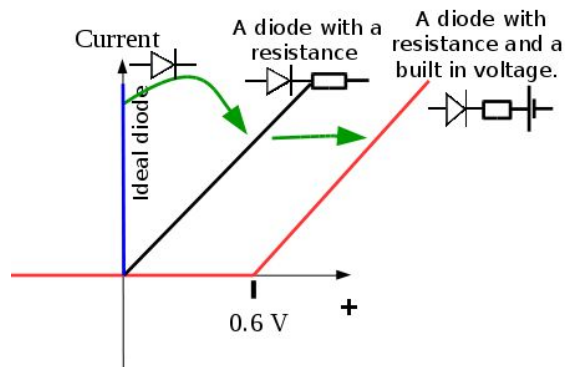
- Q1. Draw the ideal IV curve of a diode.
- Q2. Draw the non IV curve of a diode inducing, the parasitic resistance and built in voltage.
- Q3. Explain why a diode is useful in power electronics and name three other types of diodes.
- Q4. Draw a full and half wave bridge rectifier, including the input source and the output load.
- Q5. Explain with pictures how a full wave bridge rectifier works and why it is more efficient than a half wave bridge rectifier.
- Q6. Why would you use a voltage regulator when designing a power supply?
- Q7. Give an example of when the built in voltage of a power supply is useful and one example where it is a hindered.

Answers

Q1.

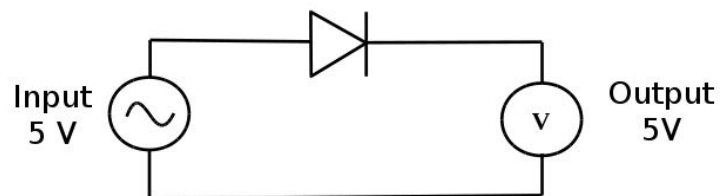


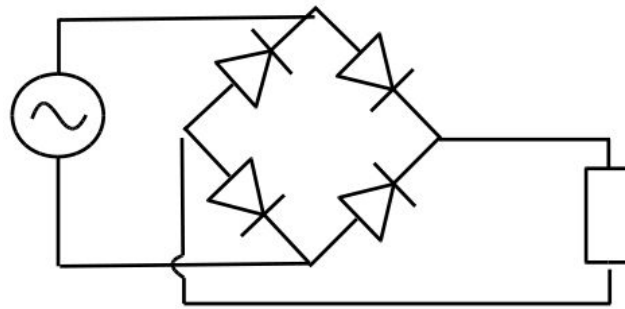
Q2.



Q3. Diodes are used for their rectifying properties. Other types of diodes are LEDs, laser diodes and solar cells.

Q4.





Q5. See notes for explanation. It's more efficient because it uses both the positive and negative cycles of the AC power to power a device.

Q6. Because of the ripple voltage produced by a bridge rectifier.

Q7. The built in voltage is useful for solar cells and not useful when designing a power supply.