

BME 301

2-Electric Circuits

Some refreshing

Homework

1. Why does a circuit need a closed path?

In order to maintain a flow of charges (typically, electrons) must move out of the source through any other circuit elements and back into the source at the opposite terminal.

Homework

2. What are the two types of circuit elements?

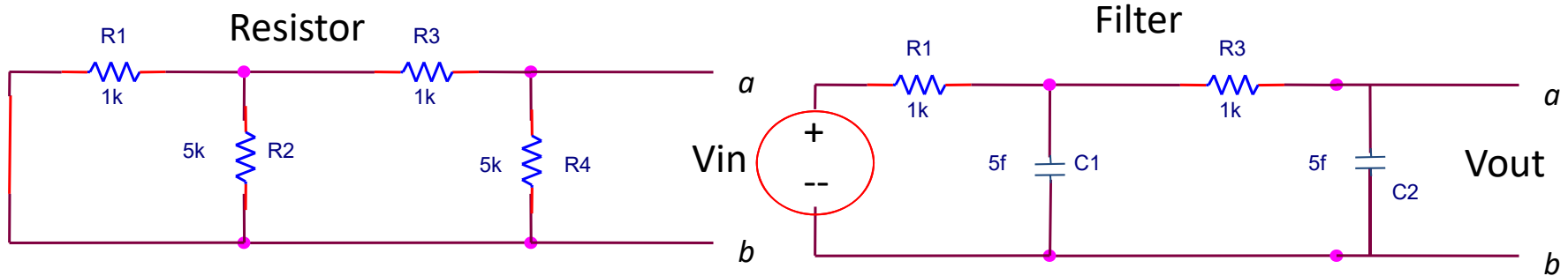
There are active and passive circuit elements.

3. What are their functions?

Active element provide energy into the circuit while passive elements either convert this energy to heat (resistors), store this energy as an electric field (capacitors), or store this energy as a magnetic field (inductors)

Homework

4. Provide two examples of a circuit using both serial and parallel connections?



5. HONORS STUDENTS ADD THE FOLLOWING

What physical law do each of Kirchhoff laws obey? Why?

KVL = conservation of energy: Voltage is the energy either provided by the active elements or dissipated/stored by the passive elements and so since energy must be conserved, the total energy must add up to zero.

KCL = conservation of charge: Charges can not be lost in a closed system.