1. In the following circuit, calculate

- a) The equivalent resistance
- b) Total current leaving the battery
- c) Total power output of the battery.
- d) The current passing through R_3



- 2. In the above circuit, replace each R with a corresponding capacitance of equal value (in μ F) i.e. C₆ = 3 μ F. Calculate
 - a) The equivalent capacitance
 - b) The total charge that leaves the battery
 - c) The total energy expended in charging the capacitors
 - d) The charge on C_3
- 3. In the following circuit, write down the equations you obtain using Kirchoff's node and loop laws. (Begin by labeling currents through resistors using the subscript of the battery that is in series with a resistor. Also indicate the direction of voltage drops using appropriate +/- signs. Also, choose the two simple loops)



4. Three light bulbs are connected in parallel to a battery in parallel. If one of the light bulbs is shorted (i.e. effectively replaced with a wire), what happens to the brightness of the remaining bulbs? Explain!