Task 2.3

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Batteries can be connected in series connection and in parallel connection.

In series connection, connecting two batteries of the same specifications is going to double voltage produced but the capacity will remain the same.

In parallel connection, connecting two batteries of the same specifications is going to double the capacity produced but the voltage will remain the same.

Battery Capacity: it is how much energy a battery can provide in full charge.

Answer:

Considering LiPo Battery discharge up till 20% of battery capacity is remaining.

5200 mAh * 0.8 = 4160 mAh

Load (Resistor & LED) Consumption in Amperes:

V = I*R so 12 = I*3.3

I = 12 / 3.3 = 3.63 A

Battery Capacity needed (Ah) = Battery Life needed (h) * Load Consumption (A)

Battery Capacity needed = 5 * 3.63 = 18.15 Ah

Number of Batteries needed = Battery Capacity needed / Battery Capacity of LiPo

Number of Batteries Needed = 18.15 / 4.160 = 4.36 Batteries

At least **5 Batteries** are needed to light the LED for more than 5 hours.