模块 5

活动：电池和电压调节

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Battery	Voltage (V)	Storage (mAh)	Type
碱性	5*1.5=7.5	2000	Primary
锂	5*1.5=7.5	3000	Primary
镍镉电池	6*1.2=7.2	1200	Secondary
镍氢池	6*1.2=7.2	1800	Secondary
锂离子	2*3.6=7.2	1900	Secondary

表 1.用于为机器人供电的存储容量为 AA（5 号电池）型尺寸电池的输出电压约为 7V。

问题 1

假设这个机器人需要1A电流才能正常工作，表1中列出的每种类型电池可以持续使用多长时间？

问题 2

假设 1 中的所有电池的重量是相同的。如果不考虑价格成本，您将会选择用哪种电池？还有请说一下您的理由，为什么选用这种电池？

问题 3

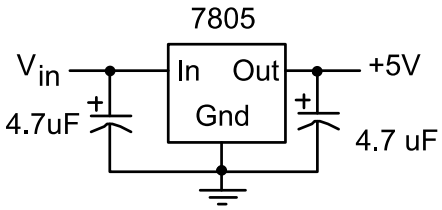
如果一个电池的存储容量是400mA/h， 整个嵌入式的系统在正常工作的模式下工作耗电为1 mA，在系统处于休眠模式下耗电为1μA。如果整个系统99.99%的时间都处于休眠模式下，那这个电池可以持续使用多长时间？

问题 4

一次电池和二次电池有什么区别或者说有什么不一样的地方？

问题 5

如果三端稳压器 7805 的输入电压为 6V，稳压器的输出应该是多少？如果三端稳压器 7805 输入为 16V 和 160V 的情况下,那三端稳压器的输出又应该是多少呢？



问题 6

二极管和电感在 LM2596 稳压电路中主要的功能是什么？

问题 7

如果你要为一个嵌入式系统设计一个电源，嵌入式系统的输入电压为 12V,电源用的是 LM78xx 系列的稳压器，那你会选用哪一种电池作为电源的输入呢？

问题 8

如果一个嵌入式系统的输入电压为 3.3V，电源选择用 LM2596 降压，那你会选用哪一种电池作为电源的输入呢？

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