

### Question 32746

Let  $U_b$  be the voltage on the battery ( $U_b=5.6V$ ),  $U$  be the voltage on the charger ( $U=6.8V$ ),  $I=10A$ ,  $U_r$  denote the voltage on the internal resistance.

Total current is calculated as  $I=\frac{U}{R+r}$ , where  $r$  is the internal resistance of the battery. Latter expression gives  $IR+Ir=U$ . Resistance of the battery  $R$  might be calculated as  $R=\frac{U_b}{I}$ .

Plugging expression for resistance into  $IR+Ir=U$ , gives

$$U_b+Ir=U \Rightarrow r=\frac{U-U_b}{I}=\frac{1.2}{10}=0.12\text{ Ohm}.$$