FIZ 9 - El. delo

PLONKEC:

$A_e = U \cdot e$

$A_e = U \cdot I \cdot t$

$e = I \cdot t$

enote:

$[J = V \cdot A \cdot s$

$As = A \cdot s]$

stran 136

nal 1: $U = 220V$

$I = 2A$

$t = 2\,min = 120s$

A_e

$A_e = U \cdot I \cdot t$

$A_e = 220V \cdot 2A \cdot 120s$

$A_e = 52800\,VAs = \underline{52{,}8\,kJ}$

nal 2: $U = 4 \cdot 10^8 V$

$e = 50\,As$

a) $A_e = ?$

b) $t = ?$ $A = 1000\,MJ = 10^9 J$

a) $A_e = U \cdot e = 4 \cdot 10^8 V \cdot 50\,As = 2 \cdot 10^{10}\,VAs = \underline{2 \cdot 10^{10} J}$

b) $t = \frac{A_e}{A_g} = \frac{2 \cdot 10^{10} J}{10^9 J} = 2 \cdot 10^{10-9} = \underline{20\ mesecev}$

PLONKEC:

$P_e = \frac{A_e}{t}$

$P_e = U \cdot I$

„ČAs" v sekunde

enote:

$[W = \frac{J}{s} = V \cdot A]$

stran 139

nal 3:

$U = 5V$

$I = 3{,}2A$

$P_e = ?$

$t = 0{,}5h = 1800s$

$P_e = U \cdot I = 5V \cdot 3{,}2A = 16W$

$A_e = P_e \cdot t = 16W \cdot 1800s = 28800\,\frac{J}{s} \cdot s = \underline{28{,}8\,kJ}$

POMNI!!! el. delo lahko izraziš tudi v Wh, oziroma v kWh

nal 4:

(A) $P_e = 20\,W$, $t = 5h$ $\Rightarrow$ $A_e = P_e \cdot t = 20\,W \cdot 5h = \underline{100\,Wh}$

(B) $P_e = 2kW$, $t = 2h$ $\Rightarrow$ $A_e = P_e \cdot t = 2kW \cdot 2h = \underline{4\,kWh}$

(C) $P_e = 600W$, $t = 1h$ $\Rightarrow$ $A_e = P_e \cdot t = 600W \cdot 1h = \underline{600\,Wh}$

(Č) $P_e = 600W$, $t = 20\,min = \frac{1}{3}h$ $\Rightarrow$ $A_e = P_e \cdot t = 600W \cdot \frac{1}{3}h = \underline{200\,Wh}$

$A < Č < C < B$

nal 5:

$U = 220V$

$I = 7{,}3A$

$t = 0{,}5h$ *

$A_e = U \cdot I \cdot t = 220V \cdot 7{,}3A \cdot 0{,}5h$

$= 803\,Wh = \underline{0{,}803\,kWh}$

če je $1kWh \ldots 0{,}08€$

$0{,}803kWh \ldots x$

$x = \frac{0{,}803kWh \cdot 0{,}08€}{1kWh} = \boxed{0{,}064€}$

...to je zelo nizka cena, vendar je to samo eno sušenje las

* v tem primeru za čas pustimo v „h", da bomo dobili „kWh", ki so enota za delo - v katerih se plačuje električno delo, ki ga plačujemo po položnicah