P8

a) if $\lambda = 900\,nm \Rightarrow E_{photon} = 2{,}21E{-}19\,J$

for a power of 10W means that we have $n_{photons} = \frac{P}{E_{photon}}$

$n_{photons} = 4{,}52E19$

if the reflection of the solar cell is 30% ⇒ the number of photons that are "converted" into electrons' is 1,35E19

But we want the current, therefore a charge ⇒ 1,35E19 x 1,6 E-19

So in 5 cm² we have a current of 2,17 A

b) We have 10W in 5cm² ⇒ 20 000 W/m² which is 20 suns