

Part C

66

$10^{-8}$

10 Nanoseconds

$10 \times 10^{-9}$  s

$1.0 \times 10^{-8}$  s

67-68

red photon

$f = 4.76 \times 10^{14}$  Hz

$E_{\text{photon}} = hf = \frac{hc}{\lambda}$

$= (6.63 \times 10^{-34} \text{ J}\cdot\text{s}) (4.76 \times 10^{14} \text{ s}^{-1})$

$= 3.16 \times 10^{-19} \text{ J}$

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GROUND STATE IS THE LOWEST ENERGY

AVAILABLE ON THE MOST STABLE ENERGY STATE