

Practice Quiz #10 Answers

lowest E

microwaves
infrared radiation
visible light
UV radiation
X-rays
gamma rays

highest E

shortest wavelength

violet
indigo
blue
green
yellow
orange
red

longest wavelength

⑧ ○ ← s orbital

⑨ ∞ ← p orbital

$$\textcircled{10} E = h\nu = (6.626 \times 10^{-34} \text{ J}\cdot\text{s}) (5.45 \times 10^{14} \frac{1}{\text{s}}) = 3.61 \times 10^{-19} \text{ J}$$

$$\textcircled{11} c = \lambda\nu$$
$$\nu = \frac{c}{\lambda} = \frac{3 \times 10^8 \frac{\text{m}}{\text{s}}}{325 \times 10^{-9} \text{ m}} = 9.23 \times 10^{14} \frac{1}{\text{s}}$$

$$E = h\nu = (6.626 \times 10^{-34} \text{ J}\cdot\text{s}) (9.23 \times 10^{14} \frac{1}{\text{s}})$$
$$= 6.12 \times 10^{-19} \text{ J}$$