

General Chemistry
Mr. MacGillivray
Quiz #10:
Quantum Theory and Light

Possibly useful equations and constants:

$$E=h\nu$$

$$c=\lambda\nu$$

$$\odot \times \ominus = \ominus$$

$$\text{cafeteria food} = \text{H}_2\text{SO}_4$$

$$c=3.00 \times 10^8 \text{ m/s}$$

$$h=6.626 \times 10^{-34} \text{ Js}$$

Arrange the following types of electromagnetic radiation in order of INCREASING ENERGY.

UV radiation
Gamma rays

X-rays
Microwave radiation

Visible light
Infrared radiation

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Arrange the following types of electromagnetic radiation in order of INCREASING WAVELENGTH.

Green
Blue

Yellow
Red

Orange
Indigo

Violet

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

8. Sketch an s orbital below.

9. Sketch a p orbital below.

10. Calculate the energy of a photon with a frequency of 5.45×10^{14} Hz.

11. Calculate the energy of a photon with a wavelength of 325 nm.