ASSIGNMENT

1. Which phenomena associated with light are most readily explained by considering the wave nature of light? Explain these phenomena based on your understanding of interference.

2. Which phenomena associated with light are most readily explained by considering the particulate nature of light? Explain these phenomena based on your understanding of the quantum nature of electromagnetic radiation.

3. What does it mean to say that the energy content of matter is quantized?

4. Molecular absorption of radiation in the UV–Vis range results in transitions between what types of energy levels?

5. Molecular absorption of radiation in the IR range results in transitions between what types of energy levels?

6. Why is an applied magnetic field necessary for NMR spectroscopy?

7. In fluorescence spectroscopy, why is the wavelength of the emitted radiation longer than the wavelength of the radiation used for excitation of the analyte?