Name _____ Per ____

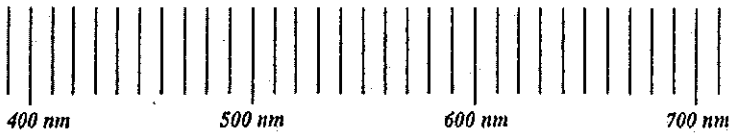
SPECTROSCOPY LAB

STATION 1:

Description: _____

_____

Bright Line Spectrum

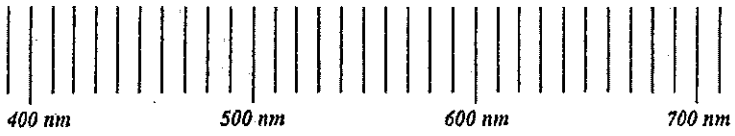


STATION 2:

Description: _____

_____

Bright Line Spectrum

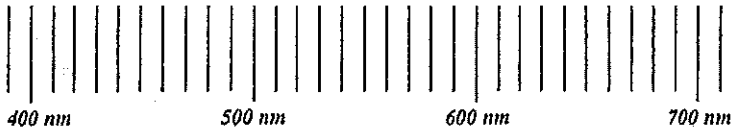


STATION 3:

Description: _____

_____

Bright Line Spectrum

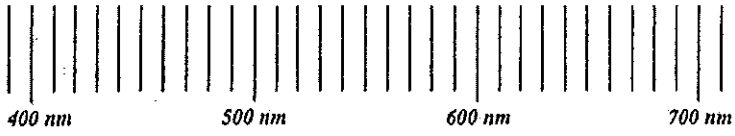


STATION 4:

Description: _____

_____

Bright Line Spectrum

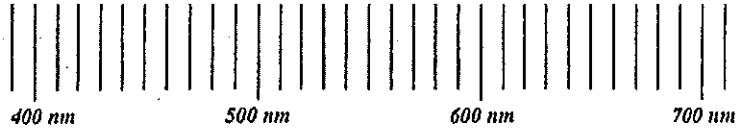


STATION 5:

Description: _____

_____

Bright Line Spectrum



Questions:

1. Which line is emitting photons traveling in the longest wavelength for the bright line spectrum at station 1?

2. Are the spectra you viewed in this experiment continuous spectra or bright line spectra? Explain the differences between the two types of spectra.

3. How is visible light created by an atom? Be specific about the role of energy levels in this process.

4. Which line is emitting photons at the highest energy (highest frequency) at station 4?

5. Which station is the element hydrogen? Explain how you deduced your answer.

6. Outline the electromagnetic spectrum.

7. Draw a diagram to show how red light might be created in an atom. Be sure to use the appropriate energy levels for creating visible light.

8. Why do some elements have more lines in their spectra? Be sure to use energy levels in your explanation.