Name: ANSWERS Date: _____

SCH 4CI **Bohr-Rutherford Diagrams Practice Plus**

Complete the Chart below

Chemical Notation	Element	Number of Protons	Number of Electrons	Number of Neutrons
1) $^{11}_{5}B$	Boron	5	5	6
2) $^{208}_{82}Pb$	Lead	82	82	126
3) $^{184}_{74}W$	Tungsten	74	74	110
4) $^{4}_{2}He$	Helium	2	2	2
5) $^{12}_{6}C$	Carbon	6	6	6
6) $^{209}_{83}Bi$	Bismuth	83	83	126
7) $^{20}_{10}Ne$	Neon	10	10	10

8) Draw Bohr-Rutherford Diagrams for elements in questions 1, 4, 5, and 7.

1) $5p^+$ $3e^-$ $6n^0$ $2e^-$

4) $2p^+$ $2n^0$ $2e^-$

5) $6p^+$ $4e^-$ $6n^0$ $2e^-$

7) $10p^+$ $8e^-$ $10n^0$ $2e^-$

9. On the Bohr-Rutherford diagram for carbon show what it would look like for this element to be in an ``**excited state**``.

$6p^+$ $1e^-$ $3e^-$ $6n^0$ $2e^-$

10. When does an element produce an emission spectrum?

[a)] when an electron returns to ground state **OR** b) when an electron jumps up to an excited state

↳ releases photon of light

DATE: NAME: CLASS:

CHAPTER 14
SKILL BUILDER

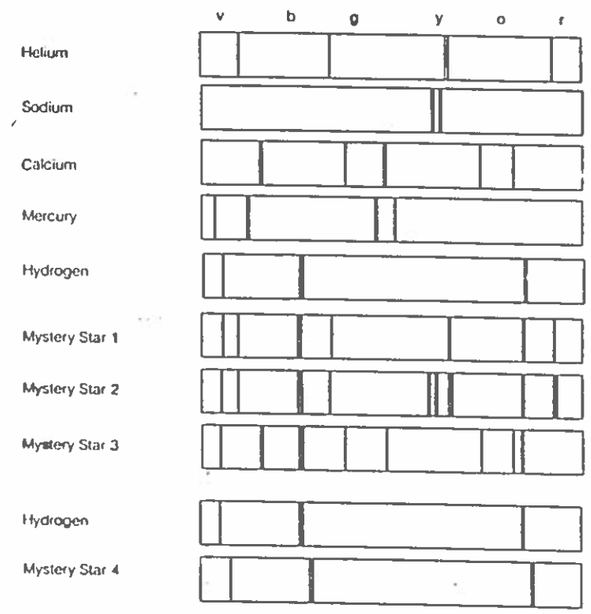
Analyzing Spectral Patterns

BLM 14-2

Goal • Practise analyzing spectral patterns.

What to Do

Analyze the spectra below in order to answer the following questions.



Questions

Use the space below, or a separate page, to write answers to the questions.

1. List the chemical elements in:
   (a) Mystery Star 1
   He, H
   (b) Mystery Star 2
   He, H, Na
   (c) Mystery Star 3
   H, Ca, He

2. (a) There is something strange about Mystery Star 4's spectrum. What chemical is in Mystery Star 4?
   Hydrogen
   (b) What is odd about the spectrum?
   shifted slightly to the right

You will learn the explanation for mystery star 4's spectrum in Chapter 15. It is called the Doppler effect. Some very important discoveries resulted from this phenomenon.

Copyright © McGraw-Hill Ryerson Limited. Permission to reproduce this page is granted to the purchaser for use in his/her classroom only.