

Chapter 4: The Periodic Table Review Sheet

1. Who is responsible for the first Periodic Table? How did he first arrange his elements?

DMITRI MENDELEEV

2. What did this gentleman (from #1) see that caused him to create a new row?

PATTERNS THAT REPEATED

3. What does it mean for something to be periodic?

"REOCCURRING" "PATTERN"

4. If something is periodic, what can we do with it?

PREDICT

5. Explain why the periodic table is periodic and give two examples we observed in lab which show periodic properties.

TRENDS FOR

e⁻ CONFIG. DENSITY MASS REACTIVITIES

6. Because of the organization of the periodic table, what was Mendeleev able to do? PREDICT PROP.

7. Which of the following elements will not be related to the others: nitrogen, antimony, OF UNDISC.

chromium, bismuth, arsenic,

ELEMENTS

CHROMIUM NOT IN SAME GROUP

8. When we say that the repeating properties of the periodic table are because of the valence electrons, what does this mean?

THOSE PROPERTIES ARE FROM WHAT

THE VALENCE e⁻ ARE DOING

9. When we refer to the s-block on the periodic table, what does this mean? How about the p-block, the d-block or the f-block?

s = GROUP 1 & 2

d = GROUP 3-10

p = GROUP 13-18

f = BOTTOM 2 "ROWS"

10. What element has a valence electron configuration of $2s^2 2p^4$? Name another element in the same family.

OXYGEN IN GROUP 16

-SULFUR
-SELENIUM
-POLONIUM

11. Complete electron configurations and identify the valence electrons for the following elements. What is the highest energy level for each of the following:

1. Sodium $3s^1$

2. Strontium $5s^2$

3. Phosphorus $3p^3$

4. Gold $5d^9$

12. Based on the metal/nonmetal lab, list four properties that metals have than nonmetals do not.

- CONDUCTS - MALLEABLE
- REACTS W/ACID - SOFT

13. What is a metalloid? How are metalloids different from metals? How are they different from nonmetals?

PROPERTIES OF BOTH M/NM

14. Which way do the families run on the periodic table (columns or rows)? What is another name for a family? Write the names for each of the families on your periodic table.

GROUP

15. Which way to periods run on the periodic table?

ROWS

16. Why are the noble gases called noble? Give me two examples of noble gases?

THEY HAVE FULL OCTET - 8 VALENCE e^-

17. Is hydrogen an alkali metal? Explain why it is in the alkali metal column?

1 e^- IN "S"

18. What is the big bang? Explain how the big bang formed elements?

HIGH E FORMED TOGETHER

19. What is fusion? If two hydrogen atoms undergo fusion, what element is formed?

2 ELEMENT MAKE BIGGER ELEMENT; He ATOM

20. What is transmutation? What do they mean when they say that transmutation is a nuclear reaction?

PRODUCES ANOTHER ELEMENT AND
LOTS OF ENERGY

21. What is an artificial element? How are artificial elements created?

MAN MADE ELEMENT - BOMBARDING ATOMS
TO FUSE TOGETHER

22. Compare and contrast synthetic and natural elements? Where does the word fusion fit into this comparison?