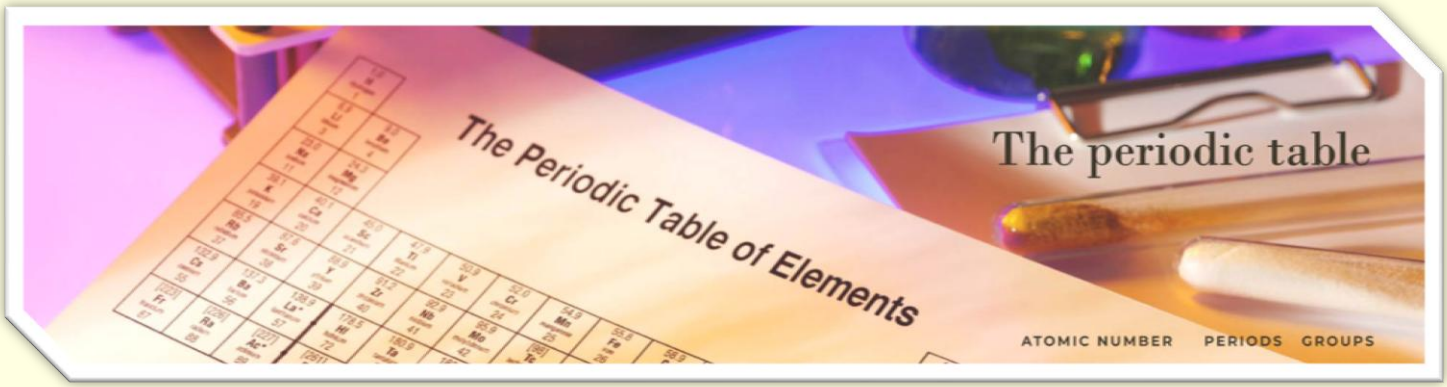
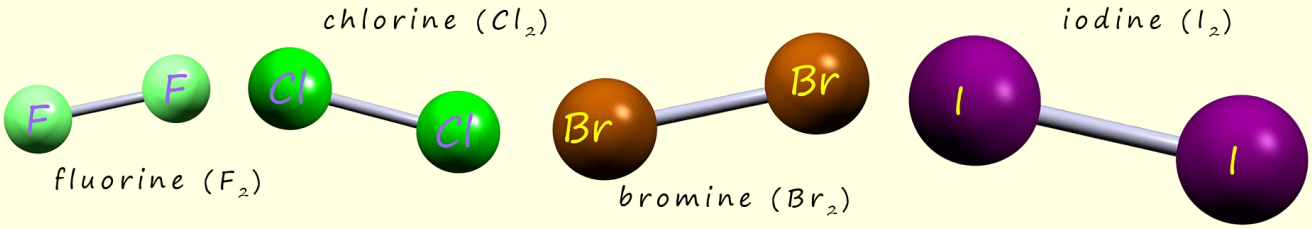


Answer all the questions below then check your answers

1. State the element that is a liquid at room temperature and is in Group 7 of the periodic table.



2. Which group of the periodic table contains unreactive gases?

3. What is the name given to the horizontal rows of the periodic table?

4. An element has the electron configuration 2,8,1. To which group does it belong?

5. What is the general name for the elements found in Group 1?

6. What is the general name for the elements found in Group 7?

7. How many electrons does a sodium atom need to lose to achieve a stable electron configuration?

8. What is the symbol of the element with atomic number 12?

9. Explain why elements in the same group of the periodic table have similar chemical properties.

10. Magnesium (Mg) and chlorine (Cl) react to form magnesium chloride. Describe the type of bonding in magnesium chloride.

11. An atom of potassium has 19 protons and 20 neutrons. Give its atomic number and mass number.

12. Describe what you would observe when potassium reacts with water.

13. Why are transition metals generally less reactive than alkali metals?

14. Write the electron configuration of a calcium atom.

15. Explain the trend in reactivity as you go down Group 1 of the periodic table.

16. Describe how the boiling points of the noble gases change as you go down the group. Explain this trend.

17. Chlorine has two isotopes, chlorine-35 and chlorine-37. Define the term 'isotope'.

18. Astatine is a halogen below iodine in the periodic table. Predict two properties of astatine.

19. Explain why metals are good conductors of electricity.

19. Sodium (Na) and Potassium (K) are both in Group 1. Explain why potassium is more reactive than sodium.

20. John Newlands and Dmitri Mendeleev both proposed ways of arranging elements. Explain why Mendeleev's periodic table was more successful than Newlands'.

Answers

1. State the element that is a liquid at room temperature and is in Group 7 of the periodic table. (Bromine)

2. Which group of the periodic table contains unreactive gases? (Group 0 / Noble Gases)

3. What is the name given to the horizontal rows of the periodic table? (Periods)

4. An element has the electron configuration 2,8,1. To which group does it belong? (Group 1)

5. What is the general name for the elements found in Group 1? (Alkali metals)

6. What is the general name for the elements found in Group 7? (Halogens)

7. How many electrons does a sodium atom need to lose to achieve a stable electron configuration? (One)

8. What is the symbol of the element with atomic number 12? (Mg)

9. Explain why elements in the same group of the periodic table have similar chemical properties. (They have the same number of electrons in their outer shell, which determines their reactivity)

10. Magnesium (Mg) and chlorine (Cl) react to form magnesium chloride. Describe the type of bonding in magnesium chloride. (Ionic bonding)

11. An atom of potassium has 19 protons and 20 neutrons. Give its atomic number and mass number. (Atomic Number = 19, Mass Number = 39)

12. Describe what you would observe when potassium reacts with water. (Fizzing/effervescence, a lilac flame, potassium moves across the surface of the water, a colourless alkaline solution is formed).

13. Why are transition metals generally less reactive than alkali metals? (Transition metals don't lose their outer shell electrons as easily)

14. Write the electron configuration of a calcium atom. (2, 8, 8, 2)

15. Explain the trend in reactivity as you go down Group 1 of the periodic table. (Reactivity increases – outer shell electron is further from the nucleus, held less strongly, and so is more easily lost)

16. Describe how the boiling points of the noble gases change as you go down the group. Explain this trend. (Boiling points increase. This is because atoms get larger with more electrons, leading to stronger forces of attraction between the atoms)

17. Chlorine has two isotopes, chlorine-35 and chlorine-37. Define the term 'isotope'. (Isotopes are atoms of the same element with the same number of protons but different numbers of neutrons, or same atomic number but different mass numbers.)

18. Astatine is a halogen below iodine in the periodic table. Predict two properties of astatine. (Possible answers: solid, reactive, forms ionic compounds with metals, forms covalent compounds with non-metals, toxic)

19. Explain why metals are good conductors of electricity. (They have a 'sea' of delocalized electrons that can move and carry charge)

19. Sodium (Na) and Potassium (K) are both in Group 1. Explain why potassium is more reactive than sodium. (Outermost electron in potassium is further from the nucleus, held less strongly, and therefore easier to lose)

20. John Newlands and Dmitri Mendeleev both proposed ways of arranging elements. Explain why Mendeleev's periodic table was more successful than Newlands'. (Mendeleev left gaps for undiscovered elements. He also was able to predict the properties of undiscovered elements with reasonable accuracy. Newlands' arrangement did not have these features.)