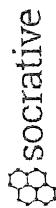


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### Periodic Table

- In the modern Periodic Table, the elements are arranged according to
  - A Mass number
  - B Oxidation number
  - C Atomic mass
  - D Atomic number
- Who was credited with creating the first Periodic Table that organized the elements according to atomic mass?
  - A Dmitri Mendeleev
  - B John Dalton
  - C Henry Moseley
  - D Ernest Rutherford
- An atom of an element contains 20 protons, 20 neutrons, and 20 electrons. This element is
  - A A noble gas
  - B A halogen
  - C An alkali metal
  - D An alkaline earth metal
- The elements of group 2 have the same number of occupied principal energy levels
  - A True
  - B False
- On the Periodic Table, an element classified as a semi-metal can be found in
  - A Period 6, Group 15
  - B Period 3, Group 16
  - C Period 4, Group 15
  - D Period 2, Group 14

6. Compared to the atomic radius of a sodium atom, the atomic radius of magnesium is smaller. The smaller radius is primarily a result of the magnesium atom having

- A A smaller nuclear charge
- B Fewer principal energy levels
- C A larger nuclear charge
- D More principal energy levels

7. As a sulfur atom gains electrons, its radius decreases

- A True
- B False

8. Which element has properties of electrical conductivity and luster and exists as a liquid at STP?

- A I
- B Hg
- C Cr
- D Br

9. What type of energy is represented in the equation  $\text{Na} + \text{energy} \rightarrow \text{Na}^+ + \text{e}^-$

- A Formation energy
- B Nuclear energy
- C Neutralization energy
- D Ionization energy

10. Which element has the greatest tendency to attract electrons?

- A Rb
- B I
- C Al
- D F

11. Which element forms a colored ion in solution?

- A K
- B Ni
- C Mg
- D Li

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12. Which represents the correct electron configuration of a group 18 element in the ground state?

- A 2-8-7-1
- B 8
- C 2-8
- D 1-1-8

13. Arrange the following elements from lowest to highest ionization energy: Be, Mg, Ca, Sr

- A Be, Mg, Ca, Sr
- B Sr, Ca, Mg, Be
- C Sr, Ca, Be, Mg
- D Be, Mg, Ca, Sr

14. Name an element touching the stair-step line that is NOT a metalloid

- A Al
- B N
- C B
- D As

15. Atomic radius decreases as you move from left to right across the periodic table.

- A True
- B False

16. When a metal atom becomes a cation (positively charged ion)...

- A It gains an electron
- B It becomes a different isotope
- C Its atomic number changes
- D Its ionic radius is smaller than its atomic radius

17. Unknown element X has four energy levels, five valence electrons, and is a metalloid. What is element X?

- A Si
- B N
- C As
- D Ge

18. What is NOT true of the element rubidium?

- A It is an alkali metal
- B It has a relatively low ionization energy
- C It has only one valence electron
- D Its radius is larger than cesium's

19. Lithium and potassium are \_\_\_\_ based on their positions on the periodic table.

- A alkali metals
- B transition metals
- C halogens
- D noble gases

20. Which group tends to have the highest ionization energy? The lowest?

- A halogens; alkaline earth metals
- B alkaline earth metals; halogens
- C alkali metals; noble gases
- D noble gases; alkali metals

21. Elements in the same family have similar chemical properties because they have the same valence electron configuration

- A True
- B False

22. Where are the elements characterized as nonmetals on the Periodic Table are located?

- A far left
- B bottom
- C center
- D top right

23. Which element is a halogen?

- A I
- B N
- C Fe
- D Ne

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24. Which element will form a +2 ion the easiest?

- A O
- B Ca
- C Na
- D Al

25. An atom with the electron configuration 2-7 would most likely

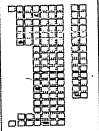
- A decrease in size as it forms a positive ion
- B increase in size as it forms a negative ion
- C increase in size as it forms a positive ion
- D decrease in size as it forms a negative ion

26. The element whose properties are most similar to those of Sb is

- A N
- B S
- C P
- D As

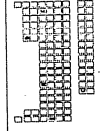
27. In the diagram pictured above, which letter represents a halogen?

- A C
- B A
- C E
- D B



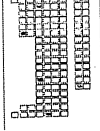
28. In the diagram above, which letter represents a transition metal?

- A A
- B E
- C B
- D D



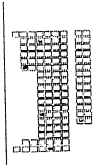
29. In the diagram above, which letter represents an element in the lanthanide series?

- A A
- B C
- C D
- D B



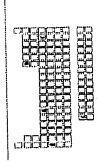
30. In the diagram above, which letter represents a metalloid?

- A B
- B E
- C A
- D D



31. In the diagram above, which letter represents an alkali metal?

- A D
- B B
- C E
- D A



32. Chlorine will bond with which of the following elements to form a highly colorful compound?

- A Oxygen
- B Sodium
- C Strontium
- D Manganese

33. Which halogen is INCORRECTLY paired with its phase at STP?

- A Br is a liquid
- B F is a gas
- C I is a liquid
- D Cl is a gas

34. At which location in the Periodic Table would the most reactive metallic element be found?

- A in Group 1 at the top
- B in Group 1 at the bottom
- C in Group 17 at the top
- D in Group 17 at the bottom

35. Elements Z and X are compared. Element Z is larger than Element X. Based on this you could say that:

- A Element Z is closer to the top of the periodic table than Element X.
- B Element X is closer to the top of the periodic table than Element Z.
- C Element X is more metallic than Element Z.
- D Element Z is more electronegative than Element X.

36. WHO AM I?

- Gain electrons when forming an ion
- Smaller atomic radius than carbon
- Least metallic in its group
- Diatomic gas at room temperature

- A phosphorus
- B neon
- C fluorine
- D bromine

37. WHO AM I?

- Radius decreases when this element forms an ion
- Unknown element has electrons in 4 energy levels
- Not a colorful compound or ion
- Has a higher ionization energy than calcium
- Is a metal

- A Gallium
- B Arsenic
- C Potassium
- D Cobalt

38. WHO AM I?

- Contains 5 valence electrons
- Has properties of both metals and nonmetals
- Has a higher electronegativity value than both zinc and tellurium

- A Antimony
- B Arsenic
- C Bismuth
- D Nitrogen

39. Which of the following elements is a monoatomic gas at STP?

- A Hydrogen
- B Oxygen
- C Carbon
- D Argon

40. Which is NOT true of the element bromine at STP?

- A It is highly reactive
- B It is a diatomic molecule
- C It does not conduct heat or electricity
- D It is brittle

