

Name: _____ Date: _____ Block: _____

Atomic Structure Review

- Rank these from heaviest to lightest: electron, ${}^4_2\text{He}$, neutron, proton, ${}^1_1\text{H}$
heaviest: _____:lightest
- Determine the number of each subatomic particle.
 - ${}^{25}_{12}\text{Mg}^{2+}$ _____ p^+ _____ n^0 _____ e^-
 - Ca-42 _____ p^+ _____ n^0 _____ e^-
 - Ag^{1+} _____ p^+ _____ e^-
- What is the mass number of Cs-130? _____
- Changing the number of electrons changes the _____ of the atom.
- Changing the number of protons changes the _____ of the atom.
- Changing the number of neutrons changes the _____ of the atom.
- What is the name of the element with an electron configuration of $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^8$? _____
- What were Rutherford's 2 discoveries? 1) _____ 2) _____
- Who discovered the electron? _____
What piece of equipment did he use to discover it? _____
- Explain why these two statements by Dalton are INCORRECT.
 - Atoms are indivisible and indestructible.
This is not true because... _____
 - All atoms of the same element are identical.
This is not true because... _____
- What 2 conclusions did Bohr come to about the organization of electrons in the atom?
 - _____ Still correct? Yes / No
 - _____ Still correct? Yes / No
- What is the maximum number of electrons that can be held by each sublevel below?
 - 1) 2s _____
 - 2) 3d _____
 - 3) 4p _____
 - 4) 4f _____
- Write the electron configuration for Bismuth: _____
- Use the diagram in your reference tables:
 - What wavelength of light is emitted when an electron falls from $n=4$ to $n=3$? _____
What type of light is this? _____
 - What transition does an electron make if violet light is emitted?
 $n=$ _____ to $n=$ _____
- Circle the two atoms that are isotopes: ${}^{20}_8\text{X}$ ${}^{20}_7\text{X}$ ${}^{21}_6\text{X}$ ${}^{22}_8\text{X}$

Name: _____ Date: _____ Block: _____

Atomic Structure Review

16) Rank these from heaviest to lightest: electron, ${}^4_2\text{He}$, neutron, proton, ${}^1_1\text{H}$

heaviest: _____:lightest

17) Determine the number of each subatomic particle.

d) ${}^{25}_{12}\text{Mg}^{2+}$ _____ p^+ _____ n^0 _____ e^-

e) Ca-42 _____ p^+ _____ n^0 _____ e^-

f) Ag^{1+} _____ p^+ _____ e^-

18) What is the mass number of Cs-130? _____

19) Changing the number of electrons changes the _____ of the atom.

20) Changing the number of protons changes the _____ of the atom.

21) Changing the number of neutrons changes the _____ of the atom.

22) What is the name of the element with an electron configuration of $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^8$? _____

23) What were Rutherford's 2 discoveries? 1) _____ 2) _____

24) Who discovered the electron? _____

What piece of equipment did he use to discover it? _____

25) Explain why these two statements by Dalton are INCORRECT.

3) Atoms are indivisible and indestructible.

This is not true because... _____

4) All atoms of the same element are identical.

This is not true because... _____

26) What 2 conclusions did Bohr come to about the organization of electrons in the atom?

3) _____ Still correct? Yes / No

4) _____ Still correct? Yes / No

27) What is the maximum number of electrons that can be held by each sublevel below?

1) 2s _____

3) 4p _____

2) 3d _____

4) 4f _____

28) Write the electron configuration for Bismuth: _____

29) Use the diagram in your reference tables:

1) What wavelength of light is emitted when an electron falls from $n=4$ to $n=3$? _____

What type of light is this? _____

2) What transition does an electron make if violet light is emitted?

$n=$ _____ to $n=$ _____

30) Circle the two atoms that are isotopes:

${}^{20}_8\text{X}$

${}^{20}_7\text{X}$

${}^{21}_6\text{X}$

${}^{22}_8\text{X}$