Name: _____ **FLUIDS AND DYNAMICS**

Blk: _____ **Date:**_____ **CHAPTERS 7, 8 & 9**

UNIT III CHEMISTRY Key Terms

These are the vocabulary words that you should know for your final exam.

Chapter 7

condensation
density
displacement
evaporation
expansion
Fluid
mass
melting
solidification
sublimation
volume

Atomic Theory

atom
conductivity
density
electron
element
mass
neutron
nucleus
proton
subatomic particles
John Dalton
J.J. Thompson
Ernest Rutherford
Niels Bohr

Periodic Table

alkali metals
alkaline earth metals
atomic mass
atomic number
Bohr model
chemical symbol
electron shell
halogens
inert gas
mass number
metal
metalloid
noble gases
non-metal
reactivity
valence electron
valence shell

UNIT III Key Concepts

These are the main ideas from this unit. Fill-in-the-blanks to complete.

Chapter 7: The KMT explains characteristics of solids, liquids and gases

- The _____ describes how particles of a solid are closer together than particles of a _____. Particles of a gas are spread far _____. (7.1)
- The _____ describes how adding energy to particles makes them move faster and farther apart. (7.1)
- Addind and removing _____ from matter can cause changes in the state of matter .(7.1)
- Liquids and gases are _____, forms of matter that can flow. (7.2)
- _____ is a way to describe how closely particles are packed together in a solid, liquid or gas. (7.2)
- Density is calculated by dividing _____ by _____. (7.2)

Atomic Theory

- John Dalton proposed that matter is made of _____, which can be part of an element (one kind of atom) or a compound (more than one kind of atom joined together). (1.3)
- Ernest Rutherford discovered the _____, a tiny, dense region at the centre of an atom. Inside it you will find _____ & _____(1.3)
- Most of the volume of an atom is occupied by _____, which exist in specific _____ first discovered by Niels Bohr. (1.3)
- Protons have a _____ charge , electrons have a _____ charge and neutrons are _____.
- Atomic _____ is equal to the number of protons of an element.
- Atomic _____ is the number of neutrons and protons. Mass # is the atomic mass rounded.
- _____ are atoms that have lost or gained electrons.

PERIODIC TABLE.

- Each element contains only _____ kind of atom, and all other forms of matter are made from combinations of these atoms and elements. (2.1)
- The periodic table lists the elements in order of increasing _____, arranged into families according to their _____. (2.2)
    - Families (or groups) are arranged _____ & periods are _____.
    - Families/Groups include:
        - _____ ex. Li, Na, K
        - _____ ex. Be, Mg, Ca
        - _____ ex. F, Cl, Br
        - _____(aka Inert gases) ex. He, Ne, Ar

- In the periodic table, metals are on the _____ side, non-metals are on the _____, and _____ form a diagonal line near the right side. (2.2)
- Elements in the same chemical family have the same number of _____ electrons in their outermost occupied electron shell. (2.3)
- A Bohr model diagram shows the arrangement of _____ in a specific pattern around the nucleus. (2.3)

Unit 3: CHEMISTRY

Ch. 7 Kinetic Molecular Theory

1.	_____ condensation	A.	the mass of a given volume
2.	_____ density	B.	an increase in volume due to a decrease in internal pressure
3.	_____ displacement	C.	form of matter that can flow (liquids & gases)
4.	_____ evaporation	D.	the amount of matter in an object
5.	_____ expansion	E.	the amount of space an object takes up when placed in a fluid
6.	_____ fluid	F.	change of state from solid to gas
7.	_____ mass	G.	change of state from solid to liquid
8.	_____ melting	H.	change of state from liquid to gas
9.	_____ solidification	I.	change of state from gas to liquid
10.	_____ sublimation	J.	change of state from liquid to solid
11.	_____ volume	K.	the amount of space an object occupies

12. A student samples an unknown material and finds that 1200ml of the material has a mass of 1080g.

a. What is the density of the material? Show your work (3 steps minimum).

b. Would this material sink or float in water? Explain.

13. Use this table to help you answer the following question:

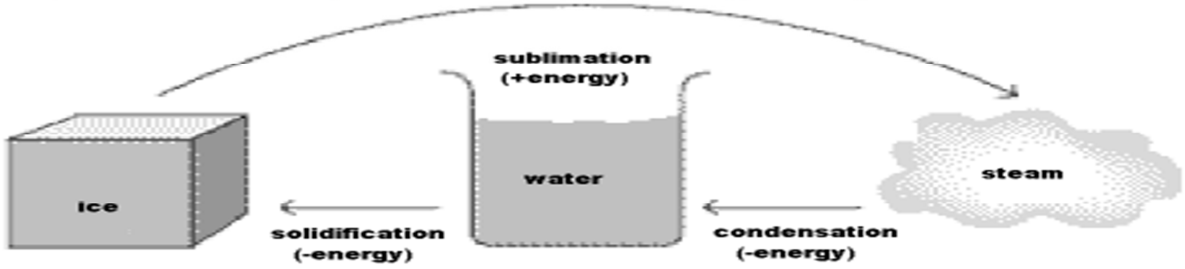
Approximate Densities of Common Substances

Fluid	Density (g/mL)	Solid	Density (g/cm^3)
hydrogen	0.00009	Styrofoam™	0.005
helium	0.0002	cork	0.24
air	0.0013	oak	0.70
oxygen	0.0014	sugar	1.59
carbon dioxide	0.002	salt	2.16
ethyl alcohol	0.79	aluminum	2.70
machine oil	0.90	iron	7.87
water	1.00	nickel	8.90
seawater	1.03	copper	8.92
glycerol	1.26	lead	11.34
mercury	13.55	gold	19.32

a. You are given an unidentified object along with a container filled with glycerol. You set the object in the container and it sinks. What do you know about the density of the unidentified object?

b. Liquid mercury has a very high density. Which of the **metals** would float on liquid mercury?

14. Correctly name each change of state & identify if energy is being added or released.



Atomic Theory

Draw the following models of the atom and identify the scientist who proposed it:

"Billiard Ball" Model	"Raisin Bun" or Plum Pudding Model	"Planetary" Model
Scientist:	Scientist:	Scientist:

Periodic Table:

Draw the Bohr models of the following elements in each box. Be sure to show the number of protons and neutrons in the nucleus. Remember that the first orbit can hold up to 2 electrons, the second and third orbits can have up to 8 electrons, and the rest can hold up to 18 electrons.

Hydrogen	Carbon	Nitrogen	Helium
Lithium	Beryllium	Fluorine	Neon