Name _____ Date _____ Period _____

Final Exam Review Packet #1 ANSWER KEY

PART 1

1) C 2) prediction, observation, theory 3) A 4) B

PART 2

1) volume
2) length
3) temperature
4) mass
5) weight
6) area
7) mass
8) volume

9) *see table below:*

1000	.1
100	.01
10	.001

10) 5400 m .5m
3.225 m 120 cm
11) .2
12) 731.7
13) 216.1
14) 72.5
15) *see table below:*

Ruler	cm, mm
Graduated Cylinder	ml
Ruler	cc or cm^3
Graduated Cylinder & Overflow Can	ml → cm^3
Triple Beam Balance	g
Spring Scale	N

16) C
17) A
18) B
19) D
20) A
21) C
22) B
23) A
24) D
25) A
26) D
27) C
28) F
29) E
30) C
31) D
32) C
33) Density
34) Bottom → Top (ABCD)

35) TBB, Mass, g
36) Spring Scale, Weight, N
37) Graduated Cylinder, Volume, ml
38) Thermometer, Temperature, °Celsius
39) 165.90 g
40) 511.00g

41a) - 2.5 °C
41b) 37.95 °C
41c) 8.2 °C
41d) 86.3 °C
41e) -10.8 °C
41f) 34.5 °C

42) P - malleability
43) C - ability to tarnish
44) P - conductivity
45) P - ductility
46) P - boiling point
47) C - reactivity
48) P – ability to cut
49) C - reactivity
50) C - flammability
51) P - density
52) P - phase
53) P - color
54) P – phase change
55) C - rusting
56) C - burning
57) P - dissolved
58) C - decomposed

PART 3

1) Solid
2) Gas
3) Solid
4) Liquid
5) Gas
6) Liquid
7) Solid
8) Gas
9) Three
10) Solid, liquid, gas
11) Four
12) Melting, boiling
13) Freezing, condensing
14) Increase heat ...increase movement
15) Decrease heat...decrease distance
16) A
17) C
18) Increases
19) Stays the same
20) Melting
21) (Question missing)
22) 100^{O}C, boiling occurs
23) Temperature does not change during phase change
24) Liquid to gas, more time spent during this phase change b/c takes more energy
25) Water (the graph shows the MP as 0 ^{O}C and the BP as 100 ^{O}C)

PART 4

1) B
2) D
3) To prevent another variable influencing results
4) To connect the cups of water and provide a means for the heat to transfer
5) From cup A to cup B
6) FALSE, conduction
7) TRUE
8) The rate of heat transfer would slow down
9) Conduction (from log to air), Convection (from hot air to cold air), Radiation (from fire to marshmallow)
10) Conduction (from stove to pot) & (from pot to handle), Convection (from hot water to cold water)
11) Radiation (from sun to anything)
12) AB
13) AC
14) BC
15) AB
16) AB
17) BC
18) BC
19) AC
20) BC
21) A
22) A
23) D
24) A
25) C
26) A
27) A
28) B
29) C
30) B
31) D
32) B
33) B
34) B
35) D
36) B
37) D
38) C
39) Water being heated
40) Counterclockwise current
41) Convection currents
42) A
43) Radiation, conduction & convection, radiation, radiation, conduction & convection
44) D
45) C
46) E
47) E
48) E (exception to the rule)
49) C
50) E
51) E
52) C
53) C, I, I, C, I
54) Gases spread out & fill up entire space transferring a scent throughout room
55) D

PART 5

1) D
2) B
3) A
4) A
5) C
6) 1st Filter sulfur then evaporate water to separate salt
7) B
8) A
9) A
10) A
11) B
12) C
13) C
14) M
15) C

16) Magnet can be used to separate the iron from sulfur proving they were not chemically combined
17) Color change, losing property of magnetism & new property of luster (signs of chemical change)
18) C
19) B
20) C
21) C
22) C
23) D
24) NO QUESTION
25) NO QUESTION
26) C (if you refer to periodic table you will be able to see that all the compounds consist of a metal & nonmetal which is indicative of an ionic compound...nonmetals are covalently bonded together)
27) C
28) B (phase changes are physical changes)
29) A (remember the arrow points to the products)
30) A

PART 6

1) D
2) C
3) B (dissociates means to separate into ions)
4) C
5) C
6) D (dissolution means to go into solution or to dissolve)
7) C
8) Decreases
9) Increases
10) No
11) b/c the addition of a solute raises BP
12) b/c freezing point depression has occurred
13) plain water
14) does not contain sugar (which causes BP elevation)
15) prevent freezing so people will not slip on ice
16) A
17) B
18) $20^{\circ}C$
19) 160g
20) Decreases
21) Increases
22) B
23) B
24) A
25) A
26) C
27) A
28) D
29) A
30) B
31) D
32) D
33) C
34) A

PART 7

1) atom
2) protons, neutrons, electrons
3) D
4) C
5) A
6) B
7) proton, pos, nucleus, neutron, zero, nucleus, electron, neg, outside nucleus in shells or energy levels

8) a. #of protons = # of electrons
   b. mass of nucleus = #p +#n
   c. atom of the same element but different mass, same #p diff #n, same atomic # diff mass#
9) atomic #
10) zero
11) equal to # protons (when atom is electrically neutral)
12) mass # - atomic# = # neutrons
13) A
14) See last page
15) See last page
16) See last page
17) See last page
18) A
19) D
20) R
21) 12
22) BQ (same row)
23) MQ
24) Valence electrons
25) BQ (energy levels same as shells occupied by electrons)
26) 7
27) Yes, b/c they are different versions of the same element (see answer 8c)
28) TRUE
29) All three diagrams represent the same element (same atomic#). Diagrams AC & BC are isotopes. Diagram A & C are atoms (electrically neutral) and Diagram B is a +2 Ion (4p>2e) Remember: electrons have nothing to do with determining if something is an isotope.
30) B
31) Elements found in the same group (column) have similar physical & chemical properties. Therefore, sodium & potassium are similar and chlorine is not similar.

PART 8
1) B
2) B
3) SKIP QUESTION (see Q16)
4) C
5) A
6) D (Electron Configuration 2-8-1 when sodium is an atom. When becoming an ion it loses the 1 valence electron and becomes $2\text{-}8^{+1}$ ion...remember metals lose electrons and become + Ions (p>e) and nonmetals gain electrons and become –Ions (e>p). Then +Ions attract –Ions and form an Ionic bond between the metal and nonmetal)
7) 5
8) 10 (2 x 5 = 10)
9) 2
10) 5
11) B
12) D
13) A
14) A
15) A
16) C
17) NO QUESTION
18) Ionic Compound (Reminder: Ionic Bonds form between metals & nonmetals, Metallic Bonds form between metals only, and Covalent Bonds occur between nonmetals only. Metallic substances conduct electricity & heat...Ionic substances conduct electricity only when dissolved in water...and Covalent substances dissolve in water but do not conduct electricity.)
19) Chemical bond

See Answers to Part 7: Q#14-17 on last 2 pages.

7-14) Fill in the following table using your Periodic Table of the Elements.

TABLE: ATOMIC STRUCTURE

SYMBOL:	ELEMENT:	ATOMIC NO.:	MASS NO.:	# PROTONS	# NEUTRONS	# ELECTRONS
P	Phosphorus	15	31	15	16	15
B	Boron	5	11	5	6	5
H	Hydrogen	1	1	1	0	1

DRAWING ATOMS:

7-15) Element: Fluorine Chemical Symbol: F

Atomic number: 9 Mass number: 19

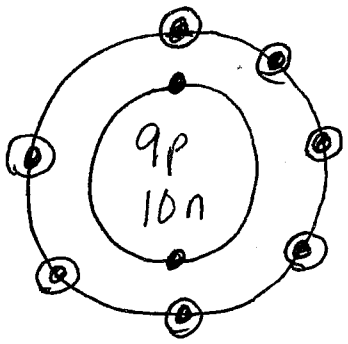
#p: 9 #n: 10 #e⁻: 9

electron configuration: 2-7

group no.: 7 period no.: 2

Metal or nonmetal? (Circle one) to the right of staircase

Draw one atom of this element in the space below. Show the protons, neutrons, and electrons in their proper orbits.
Highlight the *valence electrons.*



⊙ = valence electrons

7-16) Element: Lithium Chemical Symbol: Li

Atomic number: 3 Mass number: 7

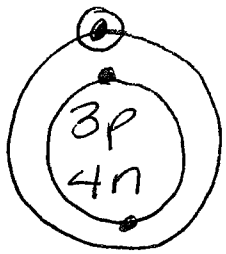
#p: 3 #n: 4 #e⁻: 3

electron configuration: (2-1)

group no.: 1 period no.: 2

Metal or nonmetal? (Circle one) to the left of staircase

Draw one atom of this element in the space below. Show the protons, neutrons, and electrons in their proper orbits.
Highlight the *valence electrons.*



-17) Using the "mini Periodic Table" shown below, answer the questions on this page.

Mini Periodic Table

1 H 1.0079							2 He 4.003
3 Li 6.941	4 Be 9.012	5 B 10.81	6 C 12.011	7 N 14.007	8 O 16.00	9 F 19.00	10 Ne 20.179
11 Na 22.99	12 Mg 24.30	13 Al 26.98	14 Si 28.09	15 P 30.974	16 S 32.06	17 Cl 35.453	18 Ar 39.948

What is the atomic # of Lithium? 3 Li

What is the mass# of Beryllium? 9.012

How many protons does Boron have? 5 B

How many electrons does Carbon have? 6

How many neutrons does Fluorine have? 19 - 9 = 10 neutrons F

What is the electron configuration for an atom of Oxygen? (2-6)

How many valence electrons does an atom of Fluorine have? Group # = # valence 7 (2-7)

How many valence electrons do atoms of the elements found in group-3 have? 3

How many metals are found in period 1? none (Hydrogen is not metal)

How many shells do elements in period 2 use for their electrons? 2

List the symbols of the elements known as the "Noble Gases". He, Ne, Ar (Group 8)

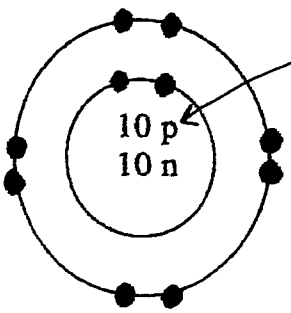
What is the name the element found in Group-3 and Period-3? Aluminum

I have an electron configuration of (2-8-5). Who am I? Write the name of the element. 2+8+5 = 15e = 15p = P

I have no neutrons in my nucleus? Who am I? Write the name of the element. Hydrogen (exception)

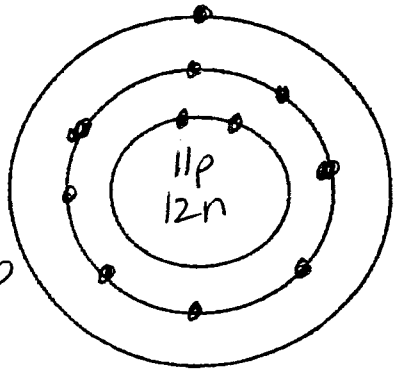
Who am I? Write the name of the element.

Neon



tells you Always what element because atomic # never changes

Draw an atom of Sodium. Include the protons, neutrons & electrons.



electron config
2-8-1

- # valence
- Group #

Uses 3 shells found in Period 3