

SNC 1D1 Exam Review

Chemistry Review

1. Label the following on the periodic table provided:

1. Alkali Earth Metals
2. Noble Gases
3. Alkaline Metals
4. Halogens
5. Transition metals

6. Shade in the elements that form diatomic molecules
7. Outline the metalloids
8. Label the number of valence electrons for each group (not transition metals)

hydrogen 1 H 1.0079 Z23	beryllium 4 Be 9.0122 Z4	lithium 3 Li 6.941 Z3	boron 5 B 10.811 Z5	carbon 6 C 12.011 Z6	nitrogen 7 N 14.007 Z7	oxygen 8 O 15.999 Z8	fluorine 9 F 18.998 Z9	neon 10 Ne 20.180 Z10														
rubidium 37 Rb 85.468 Z37	strontium 38 Sr 87.62 Z38	potassium 19 K 39.098 Z19	calcium 20 Ca 40.078 Z20	scandium 21 Sc 44.956 Z21	titanium 22 Ti 47.867 Z22	vanadium 23 V 50.942 Z23	chromium 24 Cr 51.996 Z24	manganese 25 Mn 54.938 Z25	iron 26 Fe 55.845 Z26	cobalt 27 Co 58.933 Z27	nickel 28 Ni 58.693 Z28	copper 29 Cu 63.546 Z29	zinc 30 Zn 65.39 Z30	gallium 31 Ga 69.723 Z31	germanium 32 Ge 72.61 Z32	arsenic 33 As 74.922 Z33	selenium 34 Se 78.96 Z34	bromine 35 Br 79.904 Z35	krypton 36 Kr 83.80 Z36			
cesium 55 Cs 132.91 Z55	barium 56 Ba 137.33 Z56	barium 56 Ba 137.33 Z56	lanthanum 73 La 138.91 Z73	yttrium 39 Y 88.906 Z39	zirconium 40 Zr 91.224 Z40	niobium 41 Nb 92.906 Z41	molybdenum 42 Mo 95.94 Z42	technetium 43 Tc [98] Z43	ruthenium 44 Ru 101.07 Z44	rhodium 45 Rh 102.91 Z45	palladium 46 Pd 106.42 Z46	silver 47 Ag 107.87 Z47	cadmium 48 Cd 112.41 Z48	indium 49 In 114.82 Z49	tin 50 Sn 118.71 Z50	antimony 51 Sb 121.76 Z51	tellurium 52 Te 127.60 Z52	iodine 53 I 126.90 Z53	xenon 54 Xe 131.29 Z54			
francium 87 Fr [223]	radium 88 Ra [226]	actinium 89-102 Ac [227]	actinium 89 Ac [227]	thorium 90 Th 232.04 Z90	protactinium 91 Pa [231]	uranium 92 U 238.03 Z92	neptunium 93 Np [237]	plutonium 94 Pu [244]	americium 95 Am [243]	curium 96 Cm [247]	berkelium 97 Bk [247]	californium 98 Cf [251]	einsteinium 99 Es [252]	fermium 100 Fm [257]	mendelevium 101 Md [258]	nobelium 102 No [259]	unnilseptium 107 Uus [289]	unniloctium 108 Uuo [289]	ununium 110 Uun [271]	ununium 111 Uuu [272]	ununium 112 Uub [277]	ununium 114 Uuq [289]
* Lanthanide series																						
** Actinide series																						

Name: _____

Date: _____

2. Complete the following table:

Symbol	Name	Atomic Number	Mass Number	Number of Protons	Number of Electrons	Number of Neutrons
Ga						
Cu						
Pt						
	Mercury					
			207			
		53				
					54	

3. Draw a Bohr, Bohr Rutherford and Lewis Dot Diagram for the following:

	Bohr	Bohr Rutherford	Lewis Dot
Beryllium Atom			
Beryllium Ion			
Fluorine Atom			
Fluorine Ion			

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4. Define the following terms **and give an example for each:**

A. Atom

B. Ion

C. Cation

D. Anion

E. Isotope

F. Diatomic Molecule

5. Count how many atoms are in each of the chemical formulas below by completing the tables:

a) $2\text{H}_2\text{O}_2$

Type of Atom	# of Atoms
Total # of Atoms	

d) CH_3OH

Type of Atom	# of Atoms
Total # of Atoms	

b) $\text{C}_{27}\text{H}_{46}\text{O}$

Type of Atom	# of Atoms
Total # of Atoms	

e) $\text{Al}_2(\text{CrO}_4)_3$

Type of Atom	# of Atoms
Total # of Atoms	

c) 2NaCN

Type of Atom	# of Atoms
Total # of Atoms	

f) $4\text{Ti}(\text{ClO})_3$

Type of Atom	# of Atoms
Total # of Atoms	

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6. Explain how can you tell if a compound is ionic or molecular by looking at its chemical formula.

7. Identify if each of the following compounds is ionic or molecular

a) H_2O

e) HCl

b) CO

f) ZnS

c) PbO

g) CuBr_2

d) SnSe

h) CS_3N

8. Name the **ionic compounds only** from question 7.

9. Describe how covalent and ionic bonds are different using the examples of H_2 and NaCl .

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10. Draw Lewis Dot Diagrams to determine the chemical formula of each compound. Remember, you should only end up with **ions with complete valence shells**.

a) Calcium + Oxygen

b) Potassium + Phosphorus

c) Strontium + Iodine

d) Aluminum + Phosphorus

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11. Use the crossover method to determine the chemical formula of the following compounds then name them.

a) Calcium + Oxygen

b) Potassium + Phosphorus

c) Strontium + Iodine

d) Aluminum + Phosphorus

Scientific Method/Experimental Design Review

1. Give a reason for why it is important to not include personal pronouns in lab reports or research papers?
2. Why is it important to do research on the question before forming a hypothesis or procedure?
3. What is the purpose of a conclusion in a lab report?

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4. Create hypotheses for the following questions:

a) How is the rate at which a plant grows effected by the amount of exposure to sunlight?

b) How does the number of goals a hockey player scores relate to the length of their stick?

c) How does playing video games effect a persons eye-hand coordination?

5. Write a procedure for changing a battery in a remote control. Remember to number steps and put it in past tense (with no personal pronouns of course!)

6. Write some qualitative and quantitative observations about the pencil or pen you are using to write.

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Electricity Review

1. What is the law of electric charges?

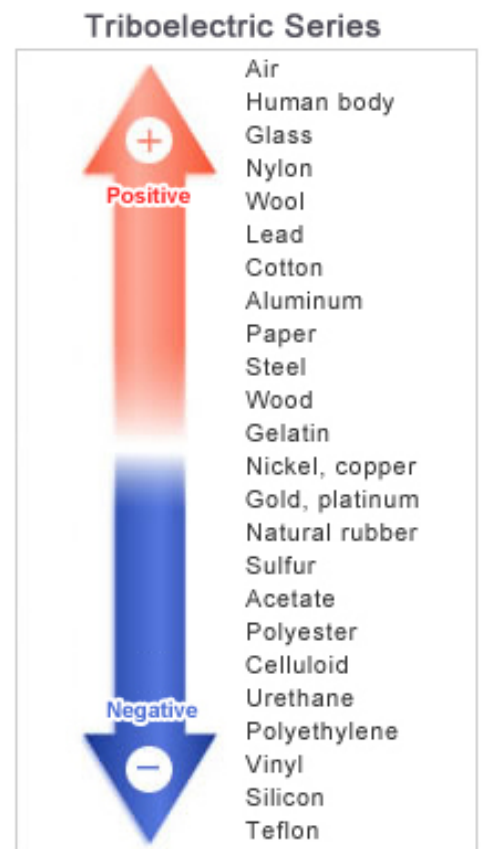
2. Use a diagram to describe what happens when a positively charged object comes near a neutral object

3. Use the electrostatic series on the right to answer the following:

a) You rub your cotton socks along a vinyl floor. What charge does each material now have?

b) You rub a polyester jacket against a wool sweater. What charge does each material now have?

c) You rub your hair on a rubber balloon. What charge does each material now have?



Name: _____

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4. Describe the difference between charging by induction, conduction and friction.

5. Define and give an example of each...

a) Conductor:

b) Insulator:

c) Semiconductor:

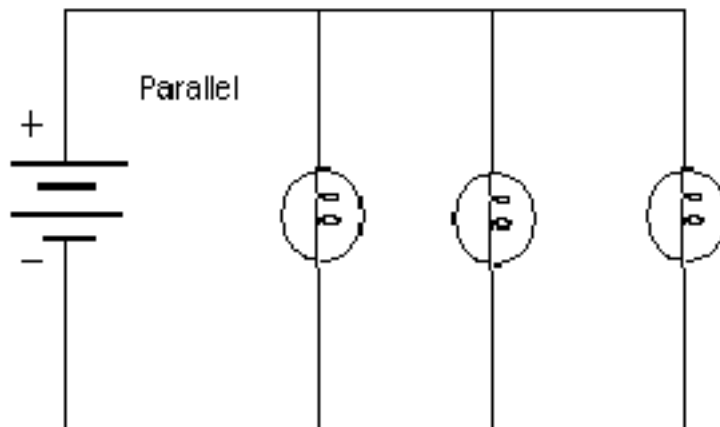
6. Draw a circuit with a 3-cell battery, a switch and 2 lamps in series. Indicate the direction of flow of electrons.

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7. Draw a circuit with a 1-cell battery and 2 lamps in series. Each lamp should have a separate switch so that only one light turns off when the switch is off. Indicate the direction of flow of electrons.

8. Indicate all possible paths for an electron to flow in the circuit below:



9. A compact fluorescent bulb has a resistance of 700Ω . The voltage through the bulb is 120V. Calculate the current through the light bulb.

10. An iPhone charger uses 2.1 amps of power at 5.1 Volts. Calculate the resistance of the charger.

This review does not contain everything we covered. Think about what is missing!