Name \_\_\_\_\_

## **Chapter 1 Sample Test**

## EITHER print this sheet and answer the following questions on the sheet OR answer the following on notebook paper. If you use notebook paper, number each question with the same numbers below. Skip lines between each question. You do not have to write the questions. There's a Periodic Table on the back for you to use.

1. For each of the following types of chemical investigations, determine whether the investigation is basic research, applied research, or technological development.

	a.	A laboratory in a major university surveys bromine.	all the reactions involving
	b.	A pharmaceutical company explores a dise medicine with less harmful side effects.	ase in order to produce a
	c.	A scientist investigates the cause of the ozo stop the loss of the ozone layer.	one hole to find a way to
	d.	A pharmaceutical company discovers a mo producing a drug.	re efficient method of
	e.	A chemical company develops a new biode not contaminate ground water.	egradable plastic that will
	f.	A laboratory explores the use of ozone to d water purification system.	levelop a less expensive
	g.	A university plans to map all the genes on I	human chromosomes.
	crime. b. A scie c. A prof	ntist uses a computer model to see how an e essor explores the reactions that take place i	nzyme will function. n a human liver.
	_ c. A prof	company scientist tries to design a better ga	isoline.
	e. An ant wrap.	hropologist tries to find out the nature of a s	substance in a mummy's
	_ f. A pha	maceutical company examines the protein of	on the coating+ of a virus.
3. Classify each of the following as a <i>homog</i>	geneous or het	erogeneous substance.	
a. iron	n ore		f. nitrogen
b. qua	artz		g. carbon dioxide

 c.	granite	 h.	iron filings
 d.	salt	 i.	granola bar
 e.	rainwater	 j.	cement sidewalk

4. Use checks in the chart below to classify each of the following properties as a *qualitative, quantitative, intensive, and extensive*. More than one check may apply for each property.

	Qualitative	Quantitative	Intensive	Extensive
The truck is rusted				
The dog is 25 kg				
The room is 27° C				
The metal rod was hot when touched				
The kitchen smells like garlic				
The density of water is 1 g/mL				

5. Classify each of the following as a *physical* or *chemical* change.

 a. ice melting
 b. paper burning
 c. battery cable corroding
 d. gas pressure in a cylinder increasing
 e. salt water evaporating
 f. food digesting
 g. potato rotting in a compost
 h. distillation of water
 i. leaves turning red in the fall

- 6. Answer the following questions in the space provided.
  - **a**. A horizontal row of elements in the periodic table is called a(n) -
  - **b**. The ability of a substance to be hammered or rolled into thin sheets is called -
  - **c.** Element Z is a good conductor of electricity at extreme temperatures and is easily crushed with a hammer. It is what type of element?
  - d. Element X is a poor conductor of electricity and breaks when hit. It is what type of element?
  - e. Element Y is good conductor of heat and is used to make pots and pans. It is what type of element?
  - f. The elements in Group 18, which are generally unreactive, are called -
  - g. At room temperature, most nonmetals are what state of matter -
  - h. Which of the following elements is most similar in properties to lithium carbon, chlorine, sodium, or aluminum?
  - i. Which of the following elements is most similar in properties to bromine carbon, chlorine, sodium, or aluminum?

7. Complete the table below by filling in the spaces with correct names or symbols. Then use a Periodic Table on the next page to fill in the type of element, state of matter, group number, period, atomic number, and atomic mass.

Name of element	Symbol of element	Type of Element	State of Matter	Group	Period	Atomic Number	Atomic Mass
	Ar						
Mercury							
Manganese							
	Pu						
	As						
Chlorine							

## Periodic Table of the Elements

87 Fr (223)	55 CS 132.90545	37 Rb 85,4678	19 K 39.0983	11 Na 22.989770	3 Li 6,941	1 H 1.00794
88 Ra (226)	56 Ba 137.327	38 Sr 87.62	20 Ca 40.078	12 Mg 243050	4 Be 9.012182	
89 Ac (227)	57 La 138.9055	39 Y 88.90585	Sc 44.955910			
104 Rf (261)	72 Hf 178.49	40 Zr 91.224	22 Ti 47.867			
105 Db (262)	73 Ta 180.9479	41 Nb 92.90638	U 23 V 50.9415			
106 Sg	74 W 183.84	42 Mo 95.94	24 Cr 51 9961			
107 Bh (262)	75 Re 186.207	43 T <b>c</b> (98)	<sup>25</sup> Mn 54.938049			
108 Hs (265)	76 Os 190.23	44 Ru 101.07	26 Fe 55.845			
109 Mt (266)	77 Ir 192.217	45 Rh 102.90550	Co 58.933200			
$D_{\rm S}^{110}$	78 Pt 195.078	46 Pd 106.42	28 Ni 58.6934			
Rg	79 Au 196.96655	47 Ag 107,8682	29 Cu 63.546			
UI2 Cn	80 Hg 20039	48 Cd 112.411	30 Zn 65.39			
Nh	81 TI 204.3833	49 In 114.818	31 Ga 69.723	Al 26.981538	5 B 10.811	
H4 FI	82 Pb 207.2	50 Sn 118.710	32 Ge 72.61	14 Si 28.0855	6 C 12.0107	
115 Mc	83 Bi 208.98038	51 Sb 121.760	33 As 74.92160	15 P 30.973761	7 N 14.00674	
116 Lv	84 Po (209)	52 Te	34 Se 78.96	16 S 32.066	8 0 15.9994	
$T_{s}^{117}$	85 At (210)	53 I 126.90447	35 Br 79.904	17 Cl 35.4527	9 F 18.9984037	
Og	86 Rn (222)	Xe 131.29	36 Kr 83.80	18 Ar 39.948	10 Ne 20.1797	2 He 4.002602