Chapter 6, 7, and 8 Test Review

PART B: MULTIPLE CHOICE

 1.	When	n a strontium atom loses two electrons to form an Sr ²⁺ ion, the electrons are lost from						ons are lost from the
	a.	5s orbital	b. 5p orbital		c. 3d oı	rbital	d	. 4f orbital
2.	The ele	ement iodine, I,	is a					
	a.	Period 5 alkali	metal	c. period	d 5 halo	ogen		
	b.	Period 4 halog	gen	d. perio	d 5 trar	nsition me	etal	
 3.	The su	batomic particle	e that plays the	greatest ro	le in de	eterminin	g the phy	sical and chemical
	proper	ties of an elem	ent is the					
	a.	Proton	b. neutron		c electr	ron	d	. photon
 4.	For wh	ich element wo	ould you expect	a large jum	p betw	een the f	irst and s	econd ionization
	energi	es?						
	a.	F	b. Ca		c. Fe		d	. Na
 5.	The ca	tegory of eleme	ents that is chara	acterized b	y the fil	lling of f	orbitals is	the
	a.	Inner transition	n metals		c. alkal	ine earth	metals	
	b.	Alkali metals			d. trans	sition me	tals	
 6.	Of the	following atom	s, which one has	s the small	est first	tionizatio	n energy	?
	a.	Boron	b. aluminum		c. nitro	gen	d	. silicon
7.	The alk	ali metals do n	ot include					
	a.	Li	b. Ca		c. Na		d	. Rb
8.	The mo	odern periodic t	able is arranged	d in order o	of increa	asing		
	a.	Atomic mass		c. atomi	c size			
	b.	Atomic number	er	d. atomi	ic radiu	S		
9.	The ele	ements in Grou	os 1A through 7	A are				
 -	a.	Alkali metals	9	c. transi	tion me	etals		
	b.	Alkaline earth	metals			ve eleme	nts	
10.	Which	of the following	g is true concerr	ning the no	ble gas	es?		
	a.		occupied s and μ	_				
	b.	They belong to						
	C.	, -	etimes referred	to as the in	nert gas	:		
	d.	All of the above			ici e Bas	•		
11.				e highest o	ccupie	d energy	level of a	n element in Group
 	5A?			ogco. o	000.p.0	u cc. 67		с.с
	a.	5	b. 3		c. 8		d. 18	
12.	_	_						r of electrons in their
 		t occupied ener		<i>Deloti</i> , 11		c the sam		
	_	Li, B, C, F		, Mg, Al, S		c. K, Ca,	Rh Sr	d. N, P, As, Sb
12			ains an electron	_	ovel is	c. K, Cu,	110, 51	u. 14, 1 , 713, 35
 13.		Mg	b. O	c. Fe	200113	d. Ne		
1/		_			wal nas		host occu	pied energy level are
 14.		d to as	italii elections ii	ii aii j subie	verne	ar the mg	nest occu	pied energy level are
		Alkali metals		c. transi	tion me	atalc		
		Alkaline earth	motals			ion metal	lc	
1 -							15	
 15.		_	ation of the elen		ne enus			
1.0		3s ²	b. 3p ⁶	c. 3p ⁵		d. 3p ⁷		
 10.			ectrons in it 3d s			d NI:		
17	a.		b. Ne	c. Ar	a+'	d. Ni	orall:	
1/.	-		group in the peri			_	-	ا ا ا
4.0	a.	Increases	b. decreases		mains t	he same	a. va	ries randomly
 TS.			among the follo					
	a.		b. Na	c. Rb		d. Fr		
 19.			m among the fo	_				
	a.	Na	b. Mg	c. Si		d. Cl		

2	20. As the number of electrons added to the same principal energy level increases, atomic size							
	genera	nerally						
	a.	Increases	b. decreases	c. rema	ains the same	d. varies randomly		
2	21. Remov	ing one electror	n from an atom r	esults in	the formation o	of an		
	a.	Ion with a 1+ c	harge	c. ion v	vith a 7+ charge			
	b.	Ion with a 1- cl	narge	d. ion with a 7- charge				
2	$_{ m -}$ 22. Among the elements listed, which would show the largest increase between the second an							
	third ic	onization energie	es?					
	a.	В	b. P	c. Ca	d. Zn			
2	23. Among the following, which element has the lowest ionization energy?							
	a.	Na	b. Cl	c. Cs	d. I			
2	24. Among	g the following, v	which element h	as the hi	ghest second io	nization energy?		
	a.	Na	b. Cl	c. Cs	d. I			
2	25. Which of the following are always larger than the neutral atoms from which they are formed?							
	a.	Positive ions	b. negative ion	ıS	c. cations	d. none of the above		
2	26. The smallest particle from among the following is							
	a.	Li	b. Li ⁺	c. F	d. F			
2	27. The least electronegative element from among the following is							
	a.	Na	b. Cl	c. Cs	d. S			

1. Explain the following terms

- a. Alloy
- b. Chemical Formula
- c. Electron dot diagram
- d. Structural diagram
- e. Formula Unit
- f. Ionic Compound
- g. Molecular Compound
- h. Ionic Bond
- i. Octet Rule
- j. Valence Electrons
- k. Cation
- I. Anion
- m. Covalent Bond
- n. Coordinate Covalent Bond

2. Complete the following table

Group	1A	2A	3A	4A	5A	6A	7A	8A
Dot								
diagram								
for								
element								
"X" in								
that								
group								
Number								
of								
Valence								
Electrons								
Predicted								
Ion								
Charge								
for								
element								
"X"								

- 3. What would be the electron configuration for an aluminum *ion*?
- 4. How would you describe the dot structure for an atom of oxygen?
- 5. What are the 7 diatomic molecules? Which one needs a triple bond?
- 6. What is a lone pair of electrons? Provide an example.
- 7. Complete the information, referring to the central atom for the following molecular shapes:

Sample Formula	Shape	No. Of Bonded/Shared Pairs	No. Of Lone/Unshared Pairs
AX ₂	linear		
AX ₃	trigonal planar		
AX ₄	tetrahedral		
AX ₃ E	trigonal pyramid		
AX ₂ E ₂	V-shape		

8. Review VSEPR Theory practice questions and handout sheets.