CHM151	Quiz 9a	25 Pts	Spring 2017	Name:	Key	
1. (3 Pts)	Write a Lev	wis structure	for OF_2 .		•	
, ,	·		L1x6 = 6 200	~	F-0: 1Fi	
2. (2 Pts)	What type onic bet	of bonding is	present in the com	pound Al(C	C1O3)3 (ionic, covi	alent, of both)?
			for the nitrate ion,			3
Lraxe	= 18			note:	N conten	cont of



4. (2 Pts) Which species has the greater radius, an I ion or an I atom? **Briefly explain your** choice of answer. I more e's Hay I atom

5. (2 pts) Briefly explain why the atomic radius decreases within a period when moving from left to right.

6. (4 Pts) Write a Lewis structure for SO₃ that obeys the octet rule, showing all non-zero formal charges, and give the total number of resonance structures for SO₃ that obey the octet rule.



3 resonance that obey fleatet

7. (2 Pts) The following successive ionization energies correspond to an element in the third row of the periodic table: $I_1 = 786.3 \text{ kJ/mol}$, $I_2 = 1,580 \text{ kJ/mol}$, $I_3 = 3,230 \text{ kJ/mol}$, $I_4 = 4,360 \text{ kJ/mol}$, $I_5 = 1,580 \text{ kJ/mol}$ 16,000, and $I_6 = 20,000 \text{ kJ/mol}$. Based on this pattern of ionization energies, identify the Bigjump between I, and Is 5: 50 Is mut be a core e.

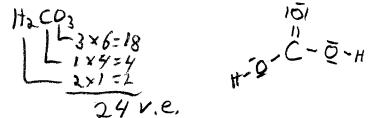
8. (2 Pts) Why is the Mg²⁺ ion smaller than F⁻, even though they are isoelectronic (have the same

electron configuration)?

Mg 2+ 12 protons

1 No c 10 es

9. (4 Pts) Carbonic acid, H₂CO₃, is a weak acid that contributes to the taste and produces the carbon dioxide bubbles in all carbonated beverages. Write a Lewis structure for H₂CO₃,



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CHM151	Quiz 9a	25 Pts	Spring 2017	Name:	Key	
1. (3 Pts)	Write a Lev	vis structure	•		•	
			L1x7=14	-	1F1	
2. (2 Pts)	What type o	of bonding is	present in the com	pound Al(ClC	_ D ₃) ₃ (ionic, coval	ent, of both)?
			for the nitrate ion,	NO ₃ -, showing	g all non-zero fo	rmal charges.
1 1x2 = 1	= 18 = \$ 24v.e.		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Note: N	V conten	sech oote
	_	_	eater radius, an I			olain your
choice	of answer.	I_ W	ore ets tha	n I atox	m	
5. (2 pts) right. Mor	Briefly expi	ain why the a	being addle being addle ing addled	eases within a defect to she	period when mo the nucle	ving from left to
charge			for SO ₃ that obeys			
503 	v.e.	S TO) - (i)	3 reson	ance that	- obety fleo
7. (2 Pts) the per	The following iodic table: $I_6 = 20$	$I_1 = 786.3 \text{ kJ/} 0,000 \text{ kJ/mol.}$	e ionization energional, I2=1,580 kJ/r Based on this para ween I4 and a core e	nol, $I_3 = 3,230$ etern of ionizat	$kJ/mol, I_4 = 4,3$	60 kJ/mol, $I_5 =$
	Why is the	Mg ²⁺ ion sma	ıller than F ⁻ , even t	hough they ar	re isoelectronic (have the same
/	Vig -	loes	5 F 9	6.2		

9. (4 Pts) Carbonic acid, H₂CO₃, is a weak acid that contributes to the taste and produces the carbon dioxide bubbles in all carbonated beverages. Write a Lewis structure for H₂CO₃,

