Name: _____ Class: _____ Date: _____ ID: A

Chemistry: Bonding Test Review (atomic structure #2)

Pdf answers

C 1. (#3- 2)Which is not a property of ionic substances
   a. crystal structure
   b. dissolve in water
   c. never conduct electricity
   d. cations + anions
   e. high melting points

C 2. (#3-3)A bond that shares electrons is
   a. metallic
   b. ionic
   c. covalent
   d. polar
   e. will not bond

d 3. (#3-1)Oxygen has 6 valence electrons and, given the opportunity, will have a -2 charge.
   a. 8, 0
   b. 6,+2
   c. 2, 6
   d. 6, -2
   e. 6, 6

a 4. (#3-1)NaF is a _____ bond.
   a. ionic
   b. covalent
   c. polar covalent
   d. metallic
   e. acid

C 5. (#3-1)An ionic bond is a bond between _____ & _____.
   a. metal, metal
   b. non-metal, non-metal
   c. metal, non-metal
   d. cations, metal
   e. anions, non-metals

C 6. (#3-1)Given the opportunity, halogens will form ____ charge
   a. 0
   b. +1
   c. -1
   d. -2
   e. +2

A a 7. (#3- 1)In an ionic formula the first item listed is the
   a. metal
   b. non-metal
   c. anion
   d. does not matter which is listed first
   e. answer is not present

a 8. (#3-3)In industry MnO_2 is named as a covalent molecule. What is the name?
   a. manganese dioxide
   b. monomanganese oxide
   c. manganese oxide
   d. permanganic acid
   e. hydropermanganic acid

___ 9. (#3-2)List the following salts in order form lowest to highest melting points +1 -2 +3 -1 +3 -2
Sodium chloride(1), Aluminum sulfide(2), Magnesium chloride(3), and Magnesium sulfide(4)
   a. 1,2,3,4
   b. 4,3,2,1
   c. 2,1,3,4
   d. 1,3,2,4
   e. 1,3,4,2,

order by charge

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A 10. (#3-2)

	NaF	MgO
Boiling Point	1695	3600

	Na^+	Mg^{2+}	F^-	Cl-	O^{-2}
Ionic Radius	76	72	133	181	140

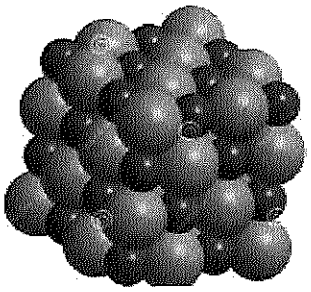
Based on the data in the tables above, which of the following statements provides the best prediction for the boiling point of NaCl ?

a. NaCl will have a lower boiling point than NaF because the coulombic attractions are weaker in NaCl than in NaF .

b. NaCl will have a boiling point between that of NaF and MgO because the covalent character of the bonds in NaCl is intermediate between that of MgO and NaF.

c. NaCl will have a higher boiling point than MgO because the ions are spaced farther apart in NaCl

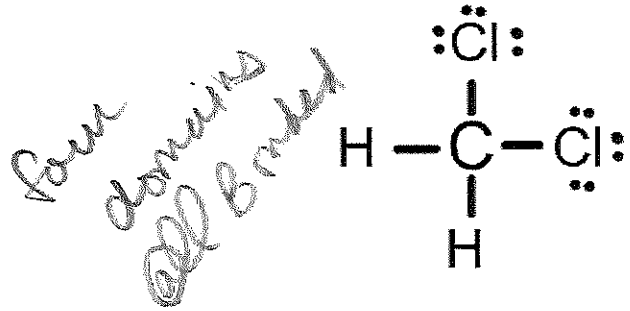
d. NaCl will have a higher boiling point than MgO because the energy required to transfer electrons from the anion to the cation is larger in NaCl than in MgO .



A 11. (#3- 1)
What type of substance is this?

a. ionic
b. Metal
c. covalent
d. mixture

d 12. (#3-2) What is the molecular shape of this molecule?



a. Linear
b. trigonal planer
c. bent
d. tetrahedral

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Matching

a. $BeCl_2$
b. SO_2
c. N_2
d. O_2
e. F_2
f. C_2H_6

b 13. (#3-4)Is a polar molecule
b 14. (#3- 3)Is best represented by two or more resonance forms
C 15. Bond contains the most energy when broken or formed. – Triple Bond
d 16. Sharing 4 electrons – double Bond
A a 17. An ionic compound
F 18. Can be burned to produce CO_2 and H_2O
F 19. Single bonded halogen
a 20. Has the highest melting point —
F 21. Increased LDF due to longer chain,

Short Answer

22. (#3-2)

Melting points of some common salts. In your own words why explain the drastic difference these examples below.

$Cs^{+1}F^{-1} \Rightarrow CsF$ 682 C

$Mg^{+2}O^{-2} \Rightarrow MgO$ 2852 C

Size of charge

23.

Provide the correct formula:
ammonium sulfide $(NH_4)_2S$
NaCl sodium chloride
copper (II) acetate $Cu(C_2H_3O_2)_2$
P_5O_{10} penta phosphorous decoxide
ammonium carbonate $(NH_4)_2CO_3$
NO_5 nitrogen pentaoxide

Name of the following:
KCl Potassium chloride
KClO Potassium hypochlorite
CuCl Copper[I]chloride
$CuClO_4$ Copper(I) Perchlorate
$NaNO_3$ Sodium Nitrate
CCl_4 Carbon tetrachloride

(#3-1 & #3-3)

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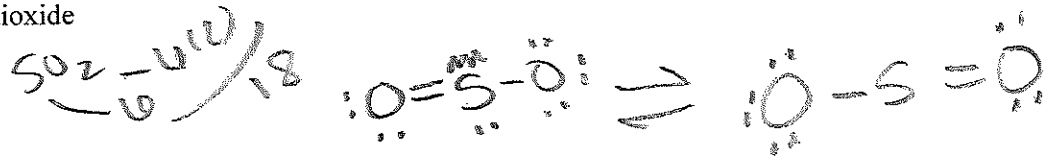
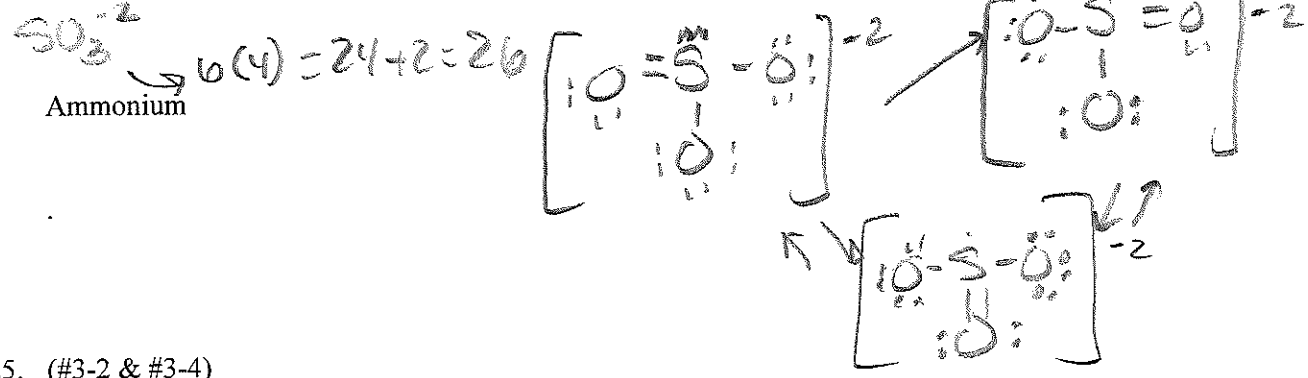
24. (#3-1)
For each of the following:
Draw a <u>Lewis dot structure</u> with all **<u>resonance structures</u>**, give the **<u>shape</u>** of the molecule and if they are polar.

Sulfur dioxide



Sulfite



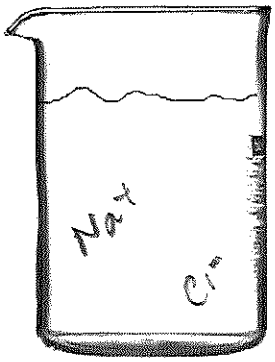
Ammonium

Essay

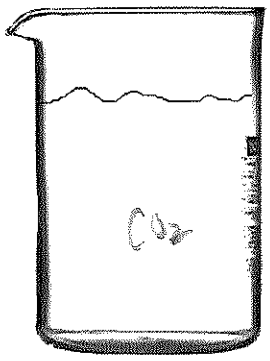
25. (#3-2 & #3-4)
A person has three solutions, a cup of distilled water, a cup of carbonated water(CO_2), and a cup of table salt water. Only one of the solutions is electrolytic. ***<u>Which one and why?</u>***

Table Salt $NaCl \rightarrow Na^+ + Cl^-$ } Charges ions conduct e⁻

<u>Below you will find 2 beakers. Draw the solution listed in each beaker.</u>



NaCl



CO_2

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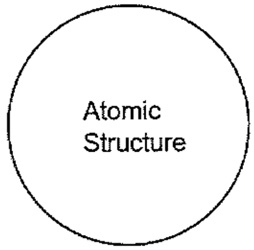
Try this what is absolutely critical

Secondary Topic

26.



Atomic structure is a secondary topic with limited points on this test. What are the top couple of concepts you should be looking for on this test from this secondary chapter?

27. Lead ions care extremely dangerous in out bodily system due to the fact that they replace the calcium ions in our bones making them very hard to remove.

Student hypothesis: Lead ions and calcium ions have a similar atomic radius an therefore lead ions can easily slide into the same spots that calcium ions reside.

a. Justify or nullify this student response using Bohr diagrams.

Pb - 6 energy levels
Ca^{2+} - 3 energy levels

b. Write out an electron configuration of the ~~lead~~ Ca^{2+} atom.

Ca^{+2}: $1s^2 2s^2 2p^6 3s^2 3p^6$