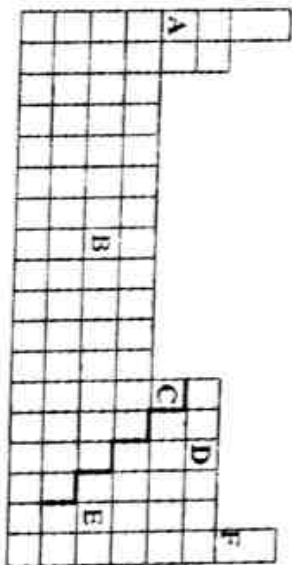


Part 1: Use the periodic table below to answer questions 1-12. Multiple answers may apply



- Which letter(s) represent metals? ABC
- Which letter(s) represent nonmetals? DEF
- Which of the following combinations represent an ionic compound? B, C, D
 - A & B
 - B & E
 - A & E
 - C & F
 - B & E
 - C & D
 - D & E
- Which of the following combinations represent a covalent molecule? B, _____
 - A & C
 - B & D
 - C & F
 - E & F
 - D & E
 - C & F
 - C & D
- Which letter(s) represent elements that use roman numerals in their chemical name(s)? B
- Which letter(s) will form a cation? ABC
- Which letter(s) will form an anion? DE
- Which letter(s) will gain three electrons to be stable? D
- Which letter(s) will acquire a +3 charge? C
- Which letter has the highest ionization energy? F
- Which letter has the highest electronegativity? D
- Which letter(s) will acquire a positive charge in following the octet rule? ABC

Part 2: Answer the questions below

- How many electrons does Mg^{2+} have? 10
- How many protons does N^{-1} have? 7
- What will be the ion symbol (formula), if the ion has 19 protons and 18 electrons? K^{+1}
- How many electrons does an ion have if it has 16 protons and a -2 charge? 18
- If an ion has 53 protons and 54 electrons, what will be its charge? -1
- Given the formula $X(NO_3)_3$, what is the charge on ion X? Be sure to include the sign (+ or -). +3
- How many electrons does the Copper ion have in the ionic compound Cu_2PO_4 ? 28
- Circle the atom in each pair that has the largest atomic radius.

a) <input checked="" type="radio"/> A) B	b) <input type="radio"/> Br	c) <input checked="" type="radio"/> Na	d) <input type="radio"/> Al
e) <input type="radio"/> O	f) <input type="radio"/> F		
- Ionization energy is energy needed to remove an e⁻
- Which letter on the chart indicates the noble gases or the inert elements — B
- Circle the atom in each pair that has the greater ionization energy.

a) Li	<input checked="" type="radio"/> b) Cl	Si	c) <input checked="" type="radio"/> Ba	d) P	<input checked="" type="radio"/> Ar
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- Electronegativity is: likely need to take another's e⁻ in a bond.
- Circle the atom in each pair that has the greater electronegativity.

a) Ca	<input checked="" type="radio"/> b) Br	As	c) Ba	<input checked="" type="radio"/> d) O	S
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- Arrange the following in order of increasing ionic size.

a. I, Br, Cl	Cl^{-}	Br^{-}	I^{-}	Sr^{2+}	Ca^{2+}
b. P^{3-} , S^{2-} , Cl^{-}	Cl^{-}	S^{2-}	P^{3-}	Sr^{2+}	Ba^{2+}
c. Ba^{2+} , Sr^{2+} , Ca^{2+}	Ca^{2+}	Sr^{2+}	Ba^{2+}		
- Label the atoms below as either Sodium or as Sodium Ion (Na^{+}):

<input type="radio"/> a. <u>Na</u> atom	<input type="radio"/> b. <u>Na^{+}</u> ion
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28. Label the atoms below as either Oxygen or as Oxygen Ion (O^{2-}):



Part 3: Name the following:

29. P_2O_5

diphosphorus pentoxide

32. VO_2^{-2}

Vanadium (IV) oxide

30. $Zn(NO_3)_2$

zinc nitrate

33. PbS^{-2}

lead (II) sulfide

31. IO_2

Iodine dioxide

Part 4: Determine the formula for the following:

34. disilicon hexabromide



29. silver acetate



35. copper (I) phosphate



30. calcium sulfate



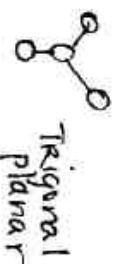
36. gallium oxide



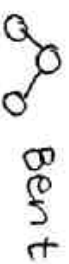
Part 5: Draw each VSEPR Shape and describe each



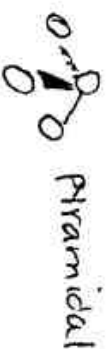
39.



38.



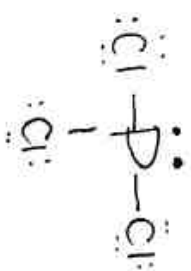
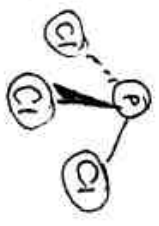
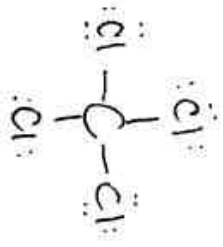
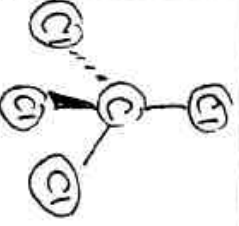
40.



41.

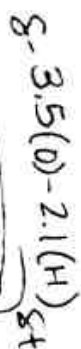


Part 6: Draw the Lewis structure and determine the molecular geometry for each.

	Lewis structure	VSEPR Molecular Shape	VSEPR Molecular Shape Name
42. PCl_3			pyramidal
43. CCl_4			tetrahedral

Part 6: Determine if the following bonds are polar or nonpolar

44. H-O



1.4 polar

45. N-Cl



0.0 nonpolar

46. P-Cl



0.9 polar