Covalent Bonding & Molecular Compounds Multiple Choice Review
PSI Chemistry ***Name_____***

1) Which pair of elements is most apt to form a molecular compound with each other?

A) aluminum, oxygen
B) magnesium, iodine
C) sulfur, fluorine
D) potassium, lithium
E) barium, bromine

2) Which of the following bonds would be best categorized as covalent?

I. H-S
II. Al-S
III. N-F

A) I only
B) II only
C) III only
D) I and III
E) I, II, and III

3) Which of the following BEST describes the bonding found within solid Al_2O_3?

A) Strong covalent bonds between atoms with similar electronegativities
B) Covalently bound atoms arranged in small individual molecules.
C) Electrostatic attractions between + and - charged ions
D) Positively charged ions covalently bound with many mobile electrons
E) None of these

4) Which of the following species below would be considered molecular in nature?

A) C(diamond)
B) C(graphite)
C) Fe
D) $AlCl_3$
E) PCl_3

5) The substance below BEST characterized as having a high melting point and able to conduct electricity in the liquid state only would be:

A) CH_4
B) V_2O_5
C) CO
D) HF
E) C(diamond)

6) A material melts at -77 C, is non-conductive, and consists of small individual molecules held together by inter-molecular forces. Which of the molecules below is this material likely to be?

A) NaCl

B) NH_3
C) C(diamond)
D) MgO
E) Cu

7) Which of the following BEST explains the relatively low melting point of covalent molecular substances?

A) Covalent molecular materials rely on weak electrostatic forces holding the ions together.
B) The “sea” of electrons between the atoms creates relatively weak bonding
C) The intermolecular forces between the molecules are weak compared to ionic or covalent bonds.
D) The metals involved create uneven bonding with the non-metals
E) The similar electronegativity of the atoms cause repulsions between the molecules

8) Which of the following would be characterized as a molecular compound?

I. CO
II. Zn(OH)2
III. Fe

A) I only
B) II only
C) III only
D) I and II
E) I, II, and III

9) Which of the following would contain both covalent and Ionic bonding?

A) CaO
B) NH_3
C) C(diamond)
D) $Ca(NO_3)_2$
E) CO_2

10) Rank the following bonds from most to least covalent in nature: (C-H, C-O, C-C, Al-O)

A) C-H , C-O, Al-O, C-C
B) C-O, C-H, C-C, Al-O
C) C-C, C-H, Al-O, C-O
D) Al-O, C-O, C-H, C-C
E) C-C, C-H, C-O, Al-O

11) The correct name for SO is _____.

A) sulfur oxide
B) sulfur monoxide
C) sulfoxide
D) sulfate
E) sulfite

12) The correct name for CCl_4 is _____.

A) carbon chloride
B) carbon tetrachlorate
C) carbon perchlorate
D) carbon tetrachloride
E) carbon chlorate

13) The correct name for N_2O_5 is _____.

A) nitrous oxide
B) nitrogen pentoxide
C) dinitrogen pentoxide
D) nitric oxide
E) nitrogen oxide

14) The name of PCl_3 is _____.

A) potassium chloride
B) phosphorus trichloride
C) phosphorous(III) chloride
D) monophosphorous trichloride
E) trichloro potassium

15) The name of the binary compound N_2O_4 is _____.

A) nitrogen oxide
B) nitrous oxide
C) nitrogen(IV) oxide
D) dinitrogen tetroxide
E) oxygen nitride

16) Which of the following would be nitrogen(I)oxide?

A) NO
B) NO_2
C) N_2O
D) N_2O_3
E) N_3O_2

17) Which of the following is named INCORRECTLY?

I. CO - carbon(II)oxide
II. OF_2 - diflourine oxide
III. H_3P - trihydrogen phosphide

A) I only B) II only C) III only D) I and II E) I, II, and III

18) The correct name for H_2O is _____.

A) hydrogen oxide

B) hydrogen(II) oxide
C) dihydrogen oxide
D) dihydrogen monoxide
E) hydrogen dioxide

19) The correct name for XeF_4 is _____.
A) monoxenon pentafluoride
B) xenon pentafluoride
C) xenon tetrafluoride
D) monoxenon tetrafluoride
E) xenon fluorate

20) The correct name for P_2O_5 is _____.
A) phosphorus oxide
B) phosphorus pentoxide
C) diphosphorus oxide
D) phosphate
E) diphosphorus pentoxide

21) The name of BCl_3 is _____.
A) boron chloride
B) boron trichloride
C) monoboron chloride
D) trichloro boron
E) monoboron trichloride

22) The name of the binary compound CS_2 is _____.
A) carbon sulfide
B) monocarbon disulfide
C) carbon disulfide
D) carbon sulfate
E) carbon disulfate

Lewis Dot Structures

23) The type of compound that is most likely to contain a covalent bond is _____.
A) one that is composed of a metal and a nonmetal
B) a solid metal
C) one that is composed of only nonmetals
D) held together by the electrostatic forces between oppositely charged ions
E) There is no general rule to predict covalency in bonds.

24) There are _____ paired and _____ unpaired electrons in the Lewis symbol for a Nitrogen atom.
A) 4, 2
B) 2, 4
C) 2, 3
D) 4, 3

E) 0, 3

25) In the Lewis symbol for a sulfur atom, there are _____ paired and _____ unpaired electrons.

A) 2, 2
B) 4, 2
C) 2, 4
D) 0, 6
E) 5, 1

26) In the Lewis symbol for an Iodine atom, there are _____ paired and _____ unpaired electrons.

A) 4, 2
B) 4,1
C) 2, 5
D) 6, 1
E) 0, 5

27) There are _____ unpaired electrons in the Lewis symbol for an oxygen atom.

A) 0
B) 1
C) 2
D) 4
E) 3

28) The only noble gas without eight valence electrons is _____.

A) Ar
B) Ne
C) He
D) Kr
E) All noble gases have eight valence electrons.

29) Which of the following would have all of it's valance electrons paired in it's lewis structure representation?

A) Al
B) P
C) S
D) F
E) Xe

30) How many single covalent bonds must a silicon atom form to have a complete octet in its valence shell?

A) 3
B) 4
C) 1
D) 2

E) 0

31) How many hydrogen atoms must bond to silicon to give it an octet of valence electrons?
A) 1
B) 2
C) 3
D) 4
E) 5

32) Which of the following atoms is without lone electrons to be shared?
A) Al
B) Be
C) B
D) He
E) H

33) A double bond (1 sigma and 1 pi bond) consists of _____ pairs of electrons shared between two atoms.
A) 1
B) 2
C) 3
D) 4
E) 6

34) A _____ covalent bond between the same two atoms is the longest.
A) single
B) double
C) triple
D) they are all the same length.
E) strong

35) As the number of covalent bonds between two atoms increases, the distance between the atoms _____ and the strength of the bond between them _____.
A) increases, increases
B) decreases, decreases
C) increases, decreases
D) decreases, increases
E) is unpredictable

36) What is the maximum number of double (pi) bonds that a hydrogen atom can form?
A) 0
B) 1
C) 2
D) 3
E) 4

37) What is the maximum number of double (pi) bonds that a carbon atom can form?

A) 4
B) 1
C) 0
D) 2
E) 3

38) In which of the molecules below is the carbon-carbon distance the shortest?
A) $H_2C = CH_2$
B) H -- C ≡ C -- H
C) $H_3C – CH_3$
D) $H_2C = C = CH_2$
E) $H_3C - CH_2 - CH_3$

39) Of the bonds C – N, C = N, C ≡ N the C – N bond is _____.
A) strongest/shortest
B) strongest/longest
C) weakest/shortest
D) weakest/longest
E) intermediate in both strength and length

40) Of the possible bonds between carbon atoms (single, double, and triple), _____.
A) a triple (sigma +2pi) bond is longer than a single bond
B) a double (sigma + pi)bond is stronger than a triple bond
C) a single (sigma) bond is stronger than a triple bond
D) a double (sigma + pi) bond is longer than a triple bond
E) a single (sigma) bond is stronger than a double bond

41) The ion ICl_4^- has _____ valence electrons.
A) 34
B) 35
C) 36
D) 28
E) 8

42) The ion NO^- has _____ valence electrons.
A) 15
B) 14
C) 16
D) 10
E) 12

43) The Lewis structure of AsH_3 shows _____ nonbonding electron pair(s) on As.
A) 0
B) 1
C) 2
D) 3
E) This cannot be determined from the data given.

44) The Lewis structure of PF_3 shows that the central phosphorus atom has _____ nonbonding and _____ bonding electron pairs.

A) 2, 2
B) 1, 3
C) 3, 1
D) 1, 2
E) 3, 3

45) The Lewis structure of HCN (H – C≡N) shows that _____ has _____ nonbonding electron pairs.

A) C, 1
B) N, 1
C) H, 1
D) N, 2
E) C, 2

46) Of the following, _____ cannot accommodate more than an octet of electrons.

A) P
B) As
C) O
D) S
E) I

47) A valid Lewis structure of _____ cannot be drawn without violating the octet rule.

A) NH_3
B) IF_3
C) PF_3
D) $SbCl_3$
E) NO_3^{1-}

48) A valid Lewis structure of _____ cannot be drawn without violating the octet rule.

A) PO_4^{3-}
B) PF_3
C) CCl_4
D) SeF_4
E) NF_3

49) The central atom in _____ does not violate the octet rule.

A) SF_4
B) KrF_2
C) CF_4
D) XeF_4
E) ICl_4^-

50) The central atom in _____ violates the octet rule.

A) NH_3
B) SeF_2
C) BF_3
D) AsF_3
E) CH_4

51) A valid Lewis structure of _____ cannot be drawn without violating the octet rule.
A) ClF_3
B) PCl_3
C) SO_3
D) CCl_4
E) CO_2

52) A valid Lewis structure of _____ cannot be drawn without violating the octet rule.
A) NI_3
B) SO_2
C) ICl_5
D) SiF_4
E) CO_2

53) A valid Lewis structure of _____ cannot be drawn without violating the octet rule.
A) NF_3
B) BeH_2
C) SO_2
D) CF_4
E) SO_3^{2-}

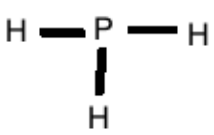
54) The central iodine atom in the ICl_4^- ion has _____ non-bonded electron pairs and _____ bonded electron pairs in its valence shell.
A) 2, 2
B) 3, 4
C) 1, 3
D) 3, 2
E) 2, 4

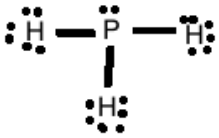
55) The central iodine atom in IF_5 has _____ non-bonded electron pairs and _____ bonded electron pairs in its valence shell.
A) 1, 5
B) 0, 5
C) 5, 1
D) 4, 1
E) 1, 4

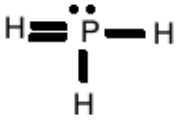
56) The central Xe atom in the XeF_4 molecule has _____ non-bonded electron pairs and _____ bonded electron pairs in its valence shell.
A) 1, 4

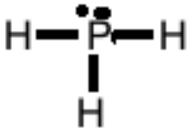
B) 2, 4
C) 4, 0
D) 4, 1
E) 4, 2

57) Which of the following correctly represents the lewis structure for PH_3?

A) 

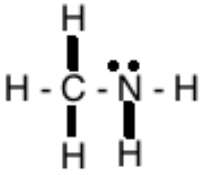
B) 

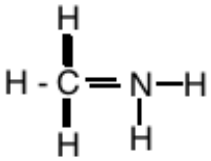
C) 

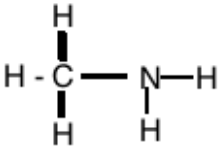
D) 

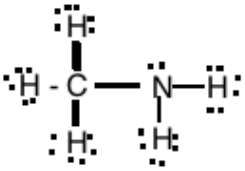
58) How many double (pi) bonds would be present in a CS_2 molecule?
A) 0
B) 1
C) 2
D) 3
E) 4

59) Which of the following would be the correct lewis structure for methyl amine (CH_3NH_2)?

A) 

B) 

C) 

D) 

Resonance
60) Resonance structures differ by _____.
A) number and placement of electrons
B) number of electrons only

C) placement of atoms only
D) number of atoms only
E) placement of electrons only

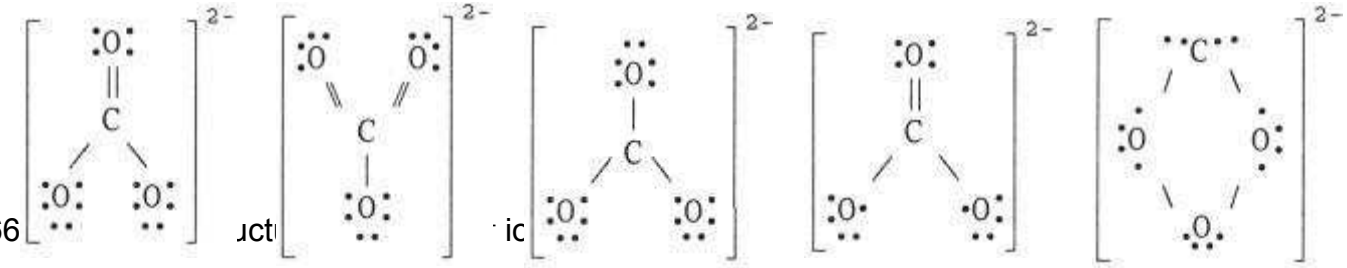
61) How many equivalent resonance forms can be drawn for CO_3^{2-} (carbon is the central atom)?
A) 1
B) 2
C) 3
D) 4
E) 0

62) How many equivalent resonance forms can be drawn for SO_2 without expanding octet on the sulfur atom (sulfur is the central atom)?
A) 0
B) 2
C) 3
D) 4
E) 1

63) How many equivalent resonance structures can be drawn for the molecule of SO_3 without having to violate the octet rule on the sulfur atom?
A) 5
B) 2
C) 1
D) 4
E) 3

64) How many different types of resonance structures can be drawn for the ion SO_3^{2-} where all atoms satisfy the octet rule?
A) 1
B) 2
C) 3
D) 4
E) 5

65) In the nitrite ion NO_2^-, _____.
A) both bonds are single bonds
B) both bonds are double bonds
C) one bond is a double bond and the other is a single bond
D) both bonds are the same
E) there are 20 valence electrons

66  uct ic

A B C D E

67) To convert from one resonance structure to another, _____.
A) only atoms can be moved
B) electrons and atoms can both be moved
C) only electrons can be moved
D) neither electrons nor atoms can be moved
E) electrons must be added

68) For resonance forms of a molecule or ion, _____.
A) one always corresponds to the observed structure
B) all the resonance structures are observed in various proportions
C) the observed structure is an average of the resonance forms
D) the same atoms need not be bonded to each other in all resonance forms
E) there cannot be more than two resonance structures for a given species

VSEPR Numbers, Geometry, Hybridization, and Bond Angles

69) The basis of the VSEPR model of molecular bonding is _____.
A) regions of electron density on an atom will organize themselves so as to maximize s-character
B) regions of electron density in the valence shell of an atom will arrange themselves so as to maximize overlap
C) atomic orbitals of the bonding atoms must overlap for a bond to form
D) electron domains in the valence shell of an atom will arrange themselves so as to minimize repulsions
E) hybrid orbitals will form as necessary to, as closely as possible, achieve spherical symmetry

70) According to VSEPR theory, if there are three electron domains in the valence shell of an atom, they will be arranged in a(n) _____ geometry.

A) octahedral
B) linear
C) tetrahedral
D) trigonal planar
E) trigonal bipyramidal

71) An electron domain could consist of _____.
I. a nonbonding pair of electrons
II. a single sigma bond
III. the pi bond component of a double or triple bond

A) I only
B) II only
C) III only
D) I, II, and III
E) II and III only

72) According to VSEPR theory, if there are five electron domains in the valence shell of an atom, they will be arranged in a(n) _____ geometry.
A) octahedral
B) linear
C) tetrahedral
D) trigonal planar
E) trigonal bipyramidal

73) According to VSEPR theory, if there are four electron domains in the valence shell of an atom, they will be arranged in a(n) _____ geometry.
A) octahedral
B) linear
C) tetrahedral
D) trigonal planar
E) trigonal bipyramidal

74) In the valence shell of an atom there are six electron domains. They will be arranged in a (an) _____ geometry.
A) hexagonal
B) tetrahedral
C) octahedral
D) trigonal bipyramidal
E) see-saw

75. Using the VSEPR model, the electron-domain geometry of the central atom in BF_3 is _____ while the molecular geometry would be described as _____.
A) linear, bent

B) trigonal planar, bent
C) trigonal planar, trigonal planar
D) trigonal bipyramidal, bent
E) octahedral , square pyramidal

76. The electron-domain geometry of the central atom in OF_2 is _____ while the molecular geometry would be described as_____.

A) linear, bent
B) trigonal planar, bent
C) tetrahedral, bent
D) trigonal bipyramidal, linear
E) octahedral, square pyramidal

77) The electron-domain geometry of the central atom in BrF_3 is _____, while the molecular geometry would be described as_____.

A) linear, linear
B) trigonal planar, trigonal planar
C) tetrahedral, triangular pyramidal
D) trigonal bipyramidal, T shaped
E) octahedral , octahedral

78) Using the VSEPR model, the electron-domain geometry of the central atom in BrF_4^- is _____ while the molecular geometry would be described as_____.

A) linear, bent
B) trigonal planar, bent
C) tetrahedral, bent
D) trigonal bipyramidal, square planar
E) octahedral , square planar

79) Which of the following would have an electron-domain geometry that is tetrahedral in nature?

I. CH_4
II. PH_3
III. XeF_4

A) I only
B) II only
C) III only
D) I and II only
E) I and III only

80) The electron-domain geometry and the molecular geometry of a molecule of the general formula AB_n are _____.

A) never the same
B) always the same
C) sometimes the same
D) not related

E) mirror images of one another

81) The electron-domain geometry and the molecular geometry of a molecule of the general formula AB_n will always be the same if _____.
A) there are no lone pairs on the central atom
B) there is more than one central atom
C) n is greater than four
D) n is less than four
E) the octet rule is obeyed

82) For a molecule with the formula AB_2 the molecular shape is _____.
A) linear or bent
B) linear or trigonal planar
C) linear or T-shaped
D) T-shaped
E) trigonal planar

83) PCl_5 has _____ electron domains and a _____ molecular arrangement.
A) 6, trigonal bipyramidal
B) 6, tetrahedral
C) 5, square pyramidal
D) 5, trigonal bipyramidal
E) 6, seesaw

84) The electron-domain geometry and molecular geometry of iodine trichloride are _____ and _____, respectively.
A) trigonal bipyramidal, trigonal planar
B) tetrahedral, trigonal pyramidal
C) trigonal bipyramidal, T-shaped
D) octahedral, trigonal planar
E) T-shaped, trigonal planar

85) Using the VSEPR model, the molecular geometry of the central atom in XeF_2 is _____.
A) linear
B) trigonal planar
C) tetrahedral
D) bent
E) trigonal pyramidal

86) Using the VSEPR model, the molecular geometry of the central atom in BCl_3 is _____.
A) linear
B) trigonal planar
C) tetrahedral
D) bent

E) trigonal pyramidal

87) Using the VSEPR model, the molecular geometry of the central atom in CF_4 is _____.
A) linear
B) trigonal planar
C) tetrahedral
D) bent
E) trigonal pyramidal

88) Using the VSEPR model, the molecular geometry of the central atom in SO_2 is _____.
A) linear
B) trigonal planar
C) tetrahedral
D) bent
E) trigonal pyramidal

89) Using the VSEPR model, the molecular geometry of the central atom in NCl_3 is _____.
A) linear
B) trigonal planar
C) tetrahedral
D) bent
E) trigonal pyramidal

90) Using the VSEPR model, the molecular geometry of the central atom in PF_5 is _____.
A) tetrahedral
B) square planar
C) trigonal bipyramidal
D) seesaw
E) square pyramidal

91) The molecular geometry of _____ is square planar.
A) CCl_4
B) XeF_4
C) PH_3
D) XeF_2
E) ICl_3

92) The molecular geometry of the CS_2 molecule is _____.
A) linear
B) bent
C) tetrahedral
D) trigonal planar

E) T-shaped

93) The molecular geometry of the SiH_2Cl_2 molecule is _____.
A) trigonal planar
B) tetrahedral
C) trigonal pyramidal
D) octahedral
E) T-shaped

94) The molecular geometry of the $PHCl_2$ molecule is _____.
A) bent
B) trigonal planar
C) trigonal pyramidal
D) tetrahedral
E) T-shaped

95) The molecular geometry of the CHI_3 molecule is _____.
A) bent
B) trigonal planar
C) trigonal pyramidal
D) tetrahedral
E) T-shaped

96) The molecular geometry of the SF_2 molecule is _____.
A) linear
B) bent
C) trigonal planar
D) tetrahedral
E) octahedral

97) The molecular geometry of the H_3O^+ ion is _____.
A) linear
B) tetrahedral
C) bent
D) trigonal pyramidal
E) octahedral

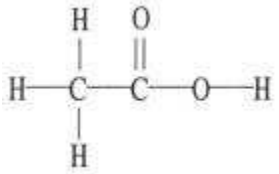
98) ClF_3 has "T-shaped" geometry. There are _____ non-bonding domains in this molecule.
A) 0
B) 1
C) 2
D) 3
E) 4

99) The electron domain and molecular geometry of BrO_2^- is _____.
A) tetrahedral, trigonal planar

B) trigonal planar, trigonal planar
C) trigonal pyramidal, linear
D) tetrahedral, bent
E) trigonal pyramidal, seesaw

100) The molecular geometry of the BrO_3^- ion is _____.
A) trigonal pyramidal
B) trigonal planar
C) bent
D) tetrahedral
E) T-shaped

Questions 101-104 refer to the molecule below:



101) The molecular geometry of the left-most carbon atom in the molecule below is _____

A) trigonal planar
B) trigonal bipyramidal
C) tetrahedral
D) octahedral
E) T-shaped

102) The hybridization of the left-most and right most carbon atoms would be_____and _____respectively.
A) sp, sp2
B) sp2, sp
C) sp3, sp
D) sp3, sp2
E) sp2, sp3

103) The H-C-H bond angle would most closely approximate _____
A) 180 degrees
B) 120 degrees
C) 117 degrees
D) 109.5 degrees
E) 107 degrees

104) The molecular geometry of the right-most carbon in the molecule below is _____.

A) trigonal planar
B) trigonal bipyramidal
C) tetrahedral
D) octahedral
E) T-shaped

105) What is the molecular geometry of a molecule that has three bonding and two non-bonding domains?

A) T-shaped
B) Tetrahedral
C) See-saw
D) Square pyramidal
E) Trigonal bipyramidal

Consider the following species when answering the following questions:

(i) PCl_3 (ii) CCl_4 (iii) $TeCl_4$ (iv) XeF_4 (v) SF_6

106) For which of the molecules is the molecular geometry (shape) the same as the VSEPR electron domain arrangement (electron domain geometry)?

A) (i) and (ii)
B) (i) and (iii)
C) (ii) and (v)
D) (iv) and (v)
E) (v) only

107) Which of the molecules has a see-saw shape?

A) (i)
B) (ii)
C) (iii)
D) (iv)
E) (v)

Choose from the following for questions #106-109

A) CH_3Cl
B) H_2O
C) N_2
D) H_2CCH2
E) H_2NNH_2

108) Contains the shortest bond length

109) Contains sp2 hybridized atom

110) Demonstrates a bent molecular geometry

111) Contains bond angles of 109.5 degrees

Polarity

112) The ability of an atom in a molecule to attract electrons is best quantified by the _____.

A) paramagnetism
B) diamagnetism
C) electronegativity
D) electron change-to-mass ratio
E) first ionization potential

113) Electronegativity _____ from left to right within a period and _____ from top to bottom within a group.

A) decreases, increases
B) increases, increases
C) increases, decreases
D) stays the same, increases
E) increases, stays the same

114) Which covalent single bond is most polar?

A) C — H
B) N — H
C) O— H
D) O— C
E) O— N

115) A nonpolar bond will form between two _____ atoms of _____ electronegativity.

A) different, opposite
B) identical, different
C) different, different
D) similar, different
E) identical, equal

116) Of the molecules below, the bond in _____ is the most polar.

A) HBr
B) HI
C) HCl
D) HF
E) H_2

117) Of the bonds below, _____ is the least polar.

A) Na, S
B) P, S

C) C, F
D) Si, Cl
E) Na, Cl

118) Which of the following has the bonds correctly arranged in order of increasing polarity?
A) Be — F, Mg — F, N — F, O — F
B) O— F, N — F, Be — F, Mg — F
C) O— F, Be — F, Mg — F, N — F
D) N — F, Be — F, Mg — F, O — F
E) Mg — F, Be — F, N — F, O — F

119) Which two bonds are most similar in polarity?
A) O— F and Cl — F
B) B — F and Cl — F
C) Al — Cl and I — Br
D) I — Br and Si — Cl
E) Cl — Cl and Be — Cl

120) Of the molecules below, only _____ is polar.
A) SbF_5
B) AsH_3
C) I_2
D) SF_6
E) CH_4

121) Of the molecules below, only _____ is nonpolar.
A) CO_2
B) H_2O
C) NH_3
D) HCl
E) $TeCl_2$

122) Of the molecules below, only _____ is polar.
A) CCl_4
B) CH_4
C) SeF_4
D) $SiCl_4$
E) CO_2

123) Of the molecules below, only _____ is nonpolar.
A) BF_3
B) NF_3
C) IF_3
D) PBr_3
E) $BrCl_3$

124) The molecular geometry of the $BeCl_2$ molecule is _____, and this molecule is

_____.
A) linear, nonpolar
B) linear, polar
C) bent, nonpolar
D) bent, polar
E) trigonal planar, polar

125) The molecular geometry of the PF_3 molecule is _____, and this molecule is _____.
A) trigonal planar, polar
B) trigonal planar, nonpolar
C) trigonal pyramidal, polar
D) trigonal pyramidal, nonpolar
E) tetrahedral, unipolar

126) Of the following molecules, only _____ is polar.
A)$BeCl_2$
B) BF_3
C) CBr_4
D) SiH_2Cl_2
E) Cl_2

127) Of the following molecules, only _____ is polar.
A)CCl_4
B) BCl_3
C) NCl_3
D) $BeCl_2$
E) Cl_2

128) The molecular geometry of the CHF_3 molecule is _____, and the molecule is _____.
A) trigonal pyramidal, polar
B)tetrahedral, nonpolar
C) seesaw, nonpolar
D) tetrahedral, polar
E) seesaw, polar

129) The molecular geometry of the BCl_3 molecule is _____, and this molecule is _____.
A) trigonal pyramidal, polar
B) trigonal pyramidal, nonpolar
C) trigonal planar, polar
D) trigonal planar, nonpolar
E) trigonal bipyramidal, polar

Answers

1. C
2. D
3. C
4. E
5. B
6. B
7. C
8. A
9. D
10. E
11. B
12. D
13. C
14. B
15. D
16. C
17. B
18. D
19. C
20. E
21. B
22. C
23. C
24. C
25. B
26. D
27. C
28. C
29. E
30. B
31. D
32. D
33. B
34. A
35. D
36. A
37. D
38. B
39. D
40. D
41. C
42. E
43. B
44. B
45. B
46. C
47. B
48. D
49. C
50. C
51. A
52. C
53. B
54. E
55. A
56. B
57. D
58. C
59. A
60. E
61. C
62. B
63. E
64. A
65. D
66. A
67. C
68. C
69. D
70. D
71. E
72. E
73. C
74. C
75. C
76. C
77. D
78. E
79. D
80. C
81. A
82. A
83. D
84. C
85. A
86. B
87. C
88. B
89. E
90. C
91. B
92. A
93. B
94. C
95. D
96. B
97. D
98. C
99. D
100. A
101. C
102. D
103. D
104. A
105. A
106. C
107. C
108. C
109. D
110. B
111. A
112. C
113. C
114. C
115. E
116. D
117. B
118. B
119. A
120. B
121. A
122. C
123. A
124. A
125. C
126. D
127. C
128. D
129. D