

Ch 10 AP MC Review Answers

① (C) HF forms hydrogen bonds and will definitely have a higher B.P. HI has more electrons and will have stronger London dispersion forces.

② (B)

③ (2)

④ (A)

⑤ (C) The stronger the intermolecular forces the more viscosity the substance will have. "C" has 3 OH groups giving it the strongest intermolecular forces due to the extreme polarity of the O-H bond.

⑥ (D) First I noticed that Z is a solid that conducts electricity, this would most likely be a metal. This eliminates "A" + "C" as answers leaving "B" + "D". One difference between "B" + "D" is that W is a molecular or ionic compound. Since W is both soluble in water and a solid at room temp, it is most likely to be an ionic compound.

⑦ (A) All of the gases are non-polar so the boiling pt. is dependent upon the strength of the London dispersion forces. London dispersion forces depend on the number of electrons, more electrons give stronger London dispersion forces.

8 D $2.5 \cdot 10^6 \text{ kg} \cdot \frac{1000 \text{ g}}{1 \text{ kg}} \cdot \frac{224 \text{ J}}{1 \text{ g}} \cdot \frac{1 \text{ kJ}}{1000 \text{ J}} = 8.35 \cdot 10^8 \text{ kJ}$

9 A This is an interstitial alloy, the atoms of γ disrupt the crystal structure ability to shift and add to the mass.

10 A Metals are bendable due to delocalized, non-directional covalent bonds.

11 B Materials with delocalized electrons are generally metals.

12 C Metals have electrons that are free to move from atom to atom allowing the metal to conduct electricity.

13 A Lithium forms a $+1$ ion and has 1 valence electron that can be delocalized to form metallic bonds.

(14) A

(15) A - A represents graphite, the covalent network in 2 dimensions gives it a high melting point while the delocalized electrons between the layers allow it to conduct electricity.

(16) B - CO_2 is a molecular solid with CO_2 molecules in a lattice held together by LDFs.

(17) C - Given the regular arrangement and the fact that all the molecules have a + end - side we can identify the molecules as polar.

(18) A - ammonia is a polar molecule with 3 N-H bonds, this means it can form H-Bonds.

(19) D - Ionic compounds have low VP, high MP and do not conduct.

(20) A

(21) D - Ge is in the same family as Si and will behave similarly.