

**AP MULTIPLE CHOICE QUESTIONS
CH. 11, SET 1**

1984

Qs 8 – 9

- (A) A network solid with covalent bonding.
- (B) A molecular solid with zero dipole moment.
- (C) A molecular solid with hydrogen bonding.
- (D) An ionic solid.
- (E) A metallic solid.

8. Solid ethyl alcohol, C_2H_5OH

9. Silicon dioxide, SiO_2

18. <u>Hydrogen Halide</u>	<u>Normal Boiling Pt., °C</u>
HF	+19
HCl	-85
HBr	-67
HI	-35

The liquefied hydrogen halides have the normal boiling points given above. The relatively high boiling point of HF can be correctly explained by which of the following?

- (A) HF gas is more ideal
- (B) HF is the strongest acid
- (C) HF molecules have a smaller dipole moment
- (D) HF is much less soluble in water
- (E) HF molecules tend to form hydrogen bonds

27. The critical temperature of a substance is the

- (A) temperature at which the vapor pressure of the liquid is equal to the external pressure.
- (B) temperature at which the vapor pressure of the liquid is equal to 760 mm Hg.
- (C) temperature at which the solid, liquid and vapor phases all in equilibrium.
- (D) temperature at which the liquid and vapor phases are in equilibrium at 1 atm pressure.
- (E) lowest temperature above which a substance cannot be liquefied at any applied pressure.

54. Which of the following statements is always true about the phase diagram of any one-component system?

- (A) The slope of the curve representing equilibrium between the vapor and liquid phases is positive.
- (B) The slope of the curve representing the equilibrium between the liquid and solid phases is negative.
- (C) The slope of the curve representing the equilibrium between the liquid and solid phases is positive.
- (D) The temperature at the triple point is greater than the normal freezing point.
- (E) The pressure at the triple point is greater than 1 atm.

85. A sample of 9.00 g of aluminum metal is added to an excess of hydrochloric acid. The volume of hydrogen gas produced at standard temperature and pressure is:

- (A) 22.4 L
- (B) 11.2 L
- (C) 7.64 L
- (D) 5.60 L
- (E) 3.74 L

1989

Qs 11 – 14

- (A) hydrogen bonding
- (B) hybridization
- (C) ionic bonding
- (D) resonance
- (E) van der Waal's forces (London dispersion forces)

11. Is used to explain why iodine molecules are held together in the solid state.

12. Is used to explain why the boiling point of HF is greater than the boiling point of HBr.

13. Is used to explain the fact that the four bonds in methane are equivalent.

14. Is used to explain the fact that the carbon-to-carbon bonds in benzene, C_6H_6 , are identical.