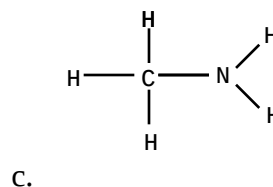
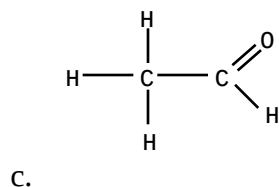
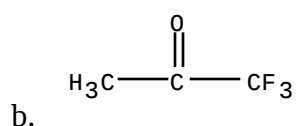
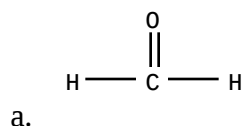


1. Which one of the following substances has dispersion forces as its only intermolecular force?

- a. CH_3OH
- b. NH_3
- c. H_2S
- d. CH_4

2. Which one of the following substances would have hydrogen bonding as one of its intermolecular forces?



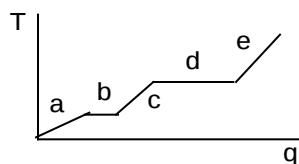
3. The substance with the largest heat of vaporization is:

- a. I_2
- b. Br_2
- c. Cl_2
- d. F_2

4. The highest viscosity is observed for which of the following liquid/temperature combinations?

- a. C_6H_{14} at 275 K
- b. C_6H_{14} at 299 K
- c. C_5H_{12} at 299 K
- d. $\text{HO}-\text{C}_4\text{H}_8-\text{OH}$ at 299 K
- e. $\text{HO}-\text{C}_4\text{H}_8-\text{OH}$ at 275 K

5. Which part of the heating curve below corresponds to melting of the solid?



a. a

b. b

c. c

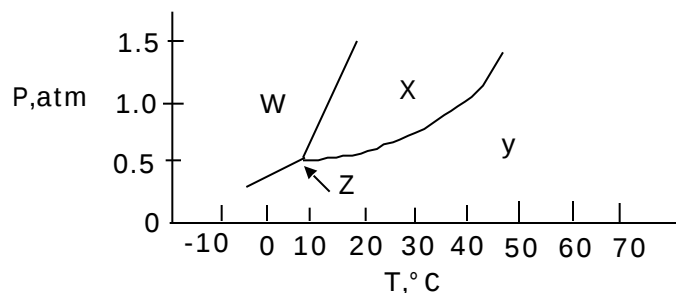
d. d

e. e

6. The enthalpy of fusion of water is 6.0 kJ/mol and the heat capacity is 75 J/mol·°C. How many kJ of heat would it take to convert 50 g of ice at 0°C to liquid water at 22°C?

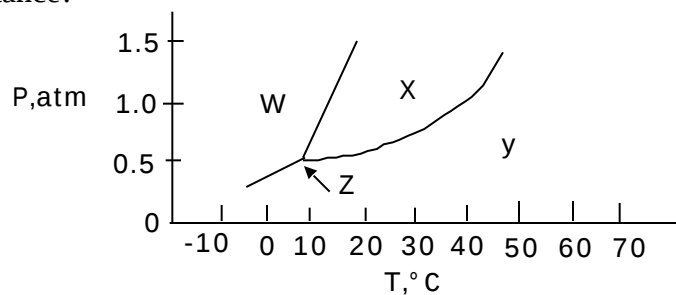
- a. 3.8×10^2
- b. 21
- c. 17
- d. 0.46

7. In which phase does the substance whose phase diagram is shown below exist at room temperature and pressure?



- a. solid
- b. liquid
- c. gas
- d. supercritical fluid

8. What is the normal boiling point of this substance?



- a. -3°C
- b. 10°C
- c. 25°C
- d. 38°C

9. The type of solid generally characterized by low melting point, softness, and extremely low electrical conductivity is:

- a. molecular
- b. metallic
- c. network covalent
- d. both ionic and molecular

10. Which one of the following substances would have the highest boiling point?

- a. CH₃OH
- b. CO₂
- c. CH₄
- d. Kr