1. **012 Chapter #070**

Calculate the amount of heat needed to melt 2.00 kg of iron at its melting point (1809 K), given that: ΔH_{fus} = 13.80 kJ/mol.

Student Response
a. 494 kJ
b. 27,600 kJ
c. 27.6 kJ
d. 27,600 J
e. 25,000 kJ

2. **012 Chapter #030**

Which of the following should have the highest boiling point?

Student Response
a. CF_4
b. CCl_4
c. CBr_4
d. CI_4
e. CH_4

3. **012 Chapter #065**

Which one of the following substances crystallizes as a molecular solid?

Student Response
a. KI
b. SiO_2
c. Sn
d. CH_3OH
e. $Al_2(SO_4)_3$

Score: 6.67/6.67

4. **012 Chapter #025**

What is the attractive force between like molecules accounting for capillary actions?

	Student Response
a.	surface tension
b.	adhesion
c.	polarity
d.	viscosity
e.	cohesion

5. **012 Chapter #035**

Arrange the following in order of *increasing* boiling point: RbCl, CH_3Cl, CH_3OH, CH_4.

	Student Response
a.	$CH_3OH < CH_3Cl <$ RbCL $< C_4$
b.	$CH_3OH < CH_4 < CH_3Cl <$ RbCl
c.	RbCL $< CH_3Cl < CH_3OH < CH_4$
d.	$CH_4 < CH_3OH < CH_3Cl <$ RbCl
e.	$CH_4 < CH_3Cl < CH_3OH <$ RbCl

6. **012 Chapter #005**

Which of the following kind(s) of intermolecular force exist between propane molecules?
I. dispersion forces;
II. dipole-dipole interactions;
III. ion-dipole interactions

	Student Response
a.	I only
b.	II only
c.	III only
d.	I, II, and III
e.	I and III

7. **012 Chapter #010**

Which one of the following substances will have both dispersion forces and dipole-dipole forces?

	Student Response	Value	Correct Answer	Feedback
a.	HCl			

b. BCl_3	
c. Br_2	
d. H_2	
e. CO_2	

Score: 6.67/6.67

8. **012 Chapter #020**

In hydrogen iodide _____ are the most important intermolecular forces.

	Student Response
a. dipole-dipole forces	
b. London dispersion forces	
c. hydrogen bonding	
d. covalent bonds	
e. polar covalent bonds	

Score: 6.67/6.67

9. **012 Chapter #045**

Octane has a vapor pressure of 40. torr at 45.1°C and 400. torr at 104.0°C. What is its heat of vaporization (R=8.314 J/K mol)?

	Student Response
a. 39.0 kJ/mol	
b. 46.0 kJ/mol	
c. 590 kJ/mol	
d. 710 kJ/mol	
e. None of these choices is correct.	

Score: 6.67/6.67

10. **012 Chapter #040**

Octane is a liquid component of gasoline. Given the following vapor pressures of octane at various

temperatures, estimate the boiling point of octane in Leadville, Colorado, where the atmospheric pressure is:
496 mmHg (R = 8.314J/K mol).
400 mmHg at 104°C;
500 mmHg at 111°C;
600 mmHg at 117°C;
700 mmHg at 122°C;
760 mmHg at 125°C

	Student Response
a.	125°C
b.	120°C
c.	115°C
d.	110°C
e.	105°C

11. 012 Chapter #050

When the adhesive forces between a liquid and the walls of a capillary tube are greater than the cohesive forces within the liquid:

	Student Response
a.	the liquid level in a capillary tube will rise above the surrounding liquid and the surface in the capillary tube will have a convex meniscus.
b.	the liquid level in a capillary tube will rise above the surrounding liquid and the surface in the capillary tube will have a concave meniscus.
c.	the liquid level in a capillary tube will drop below the surrounding liquid and the surface in the capillary tube will have a convex meniscus.
d.	the liquid level in a capillary tube will drop below the surrounding liquid and the surface in the capillary tube will have a concave meniscus.
e.	None of these will occur.

12. 012 Chapter #060

A metal such as chromium in the body-centered cubic lattice will have _____ atom(s) per unit cell.

	Student Response
a.	1
b.	2
c.	3
d.	4
e.	9

13. 012 Chapter #055

The number of atoms in a face-centered cubic unit cell is:

	Student Response
a.	1
b.	2
c.	3
d.	4
e.	8

14. 012 Chapter #001

What is the name given to the attractive forces that hold particles together in the condensed phase?

	Student Response
a.	ionic bonds
b.	covalent bonds
c.	intermolecular forces
d.	elctronegativity
e.	electron attraction

Score: 6.67/6.67

15. 012 Chapter #015

Which of the following substances will have hydrogen bonds between molecules?

	Student Response
a.	$(CH_3)_3N$
b.	CH_3—O—CH_3
c.	CH_3CH_2—OH
d.	CH_3CH_2—F
e.	HI