Phases of Matter

Questions

Module 1.1

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Question 1

Choose the correct answer for the statement:

1.1. Sugar that dissolves in a cup of warm water is an example of:

A. Evaporation
B. Condensation
C. Chemical change
D. Physical change

1.2. At room temperature, the water molecules in a cup have:

A. No velocity
B. A temperature of 30 degrees
C. Different velocities
D. The same velocity

1.3. Heat can be defined as:

A. How fast particles move
B. How warm the system is
C. The amount of internal energy
D. Energy in transition due to the difference in temperature

1.4. Temperature can be defined as

A. How fast particles move
B. How warm the system is
C. The amount of internal energy
D. Energy in transition due to the difference in temperature

1.5. Which one of the following substances can be compressed?
I. Gas
II Liquid
III Solid

A. Only I
B. I and II
C. I , II and III
D. None of the substances

Question 2

Match column B with column A

Column A	Column B
2.1. Gas to liquid	A. Eviction
2.2. Gas to solid	B. Energy absorption
2.3. Solid to gas	C. Condensation
2.4. Exothermic	D. Energy release
2.5. Endothermic	E. Sublimation

Question 3

3.1. When a substance boils, does it evaporate simultaneously?
3.2. What happens to the speed of particles when temperature increases?
3.3. Compare the tempo at which a substance will boil as well as evaporate.

Question 4

Is the following statement true or false? In case the statement is false, rewrite it to render it true.
4.1. A substance with a small molecule has a lower melting point than a substance with a smaller molecule.
4.2. Viscosity decreases with the decrease in temperature.
4.3. Kinetic energy increases with the increases in temperature.
4.4. Density of gas is higher than that of liquid.
4.5 The smaller a molecule, the lower its melting and boiling points.

Question 5

5.1. Name the seven basic principles the particle model is based on.
5.2. Why does the kinetic energy of particles in gas differ?
5.3. Name 2 physical changes an object undergoes with heating.
5.4. Which 2 factors determine the phase of a substance?
5.5. Name, sketch and describe the 3 phases of matter.

Question 6

Give the definition of the following:
6.1. Kinetic energy
6.2. Boiling point
6.3. Melting point
6.4. Chemical change
6.5. Physical change
6.6. Eviction

Question 7

7.1. Draw a diagram to illustrate how a substance changes in phase and caption the sketch.
7.2. Name 3 types of physical changes a substance can undergo.
7.3. When ice melts, the temperature remains at 0 degrees until the ice is completely melted and the temperature increases to room temperature. Explain why using the particle model.
7.4. If water is heated at 100 degrees, the temperature will remain constant at 100 degrees until the water evaporates. Explain why using the particle model.

Question 8

Complete the following table:

Macroscopic characteristics	Solid	Liquid	Gas
Form			
Flow			
Compressibility			
Spaces between particles			
Energy of particles			
Movement of particles			
Gravitational forces between particles			

Question 9

Sulphur powder is heated until it evaporates.
9.1. Draw the theoretical heating curve and caption it.

Question 10

The following table gives the melting and boiling points of various substances:

Substances	Melting point	Boiling point
Carbon dioxide	-78.5	-78.5
Rubidium	39.31	688
Bromine	-7.2	58.8
Mercury	-38.83	184.3
Sodium	97.8	883
Nitrogen dioxide	-11.2	21.1
Iron	1536	2862
Oxygen	-218.79	-182.95
Iodine	113.7	184.3

Name the substances that are:
10.1. Solid at room temperature
10.2. Liquids at room temperature
10.3. Gases at room temperature
10.4. Solid at 100°C
10.5. Liquid at -40°C
10.6 Gas at 500°C