



Review: Solids, Liquids, & Gases

Match each description on the left with the state of matter on the right. Each state of matter may be used **more than once**.

Description	State of Matter
1. _____ can diffuse the fastest	<p style="text-align: center;">X Y Z</p>
2. _____ particles can only vibrate	
3. _____ has fixed shape and volume	
4. _____ moves quickly in all different directions	
5. _____ has shape and volume similar to plasma	
6. _____ state of matter that is the end result of melting	
7. _____ particles are arranged in regular, repeating patterns	
8. _____ particles slip and slide past each other in a container	

Circle the letter of the best answer for questions 9 to 23.

9. Which of the following analogies are appropriate to explain the different states of matter?

I	Solid—people standing side by side in a crowded elevator
II	Liquid—people dancing and moving around other people in a gym
III	Gas—two people at opposite corners of an empty football stadium

- A. I and II only C. II and III only
 B. I and III only D. I, II, and III
10. Which state of matter is a gas-like mixture of positively and negatively charged particles that occur in the Sun and in lightning?
- A. gas C. liquid
 B. solid D. plasma
11. Which of the following has a definite volume, but its shape is determined by its surrounding?
- A. coffee C. a helium balloon
 B. an apple D. neon gas in an OPEN sign

12. What does the kinetic molecular theory explain?
- A. how particles behave when “their spacing and movement change”
 - B. how to measure the kinetic energy of solids, liquids, and gases
 - C. how to find the rate of diffusion of solids, liquids, and gases
 - D. how to determine the change in temperature as a solid changes to a liquid and then to a gas

13. Which of the following are the key concepts of the kinetic molecular theory?

I	particles are in constant motion
II	matter is made up of very small particles
III	heat and kinetic energy make the particles move

- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II, and III
14. What happens to a substance when energy is removed from it?
- A. The particles increase in volume.
 - B. The particles become less dense.
 - C. The particles take up more space.
 - D. The particles move around at a slower rate.
15. Which of the following explains why running through air is easier than running through water?
- A. There are more empty spaces in air than water.
 - B. The particles are more compact in air than water.
 - C. Air is denser than water and easier to manoeuvre around.
 - D. There are no particles in air, while there are lots of particles in water.

16. Which of the following changes of state involve energy being released to the environment?

I	deposition
II	vaporization
III	condensation

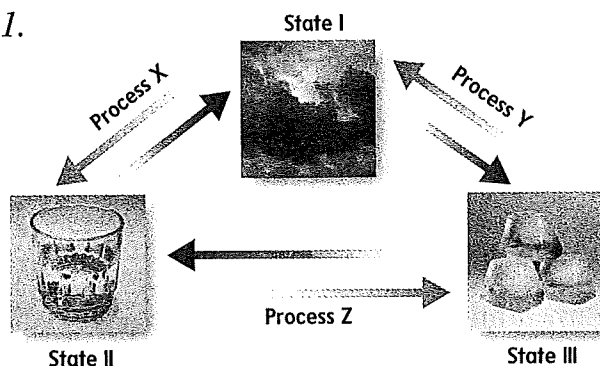
- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

17. Which of the following describe melting?

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

I	energy is added
II	the opposite of freezing
III	change of state from a solid to a liquid

Use the diagram to answer questions 18 to 21.



18. Which of the following shows the three states of matter in order of increasing kinetic energy?

	Least amount of kinetic energy		Greatest amount of kinetic energy	
A	State I	State II	State III	
B	State II	State I	State III	
C	State III	State I	State II	
D	State III	State II	State I	

19. What represents **Process Y** in the diagram?

- A. melting
- B. freezing
- C. sublimation
- D. vaporization

20. Which of the following occurs during **Process Z**?

- A. Kinetic energy is added.
- B. Particles start to slow down.
- C. The volume becomes indefinite.
- D. Particles spread farther apart.

21. Which of the following is an example of **Process X**?

- A. the hardening of cement
- B. dew forming on grass in the morning
- C. liquid hand sanitizer evaporating from your hand
- D. the heat from the flame melting the wax on a birthday candle

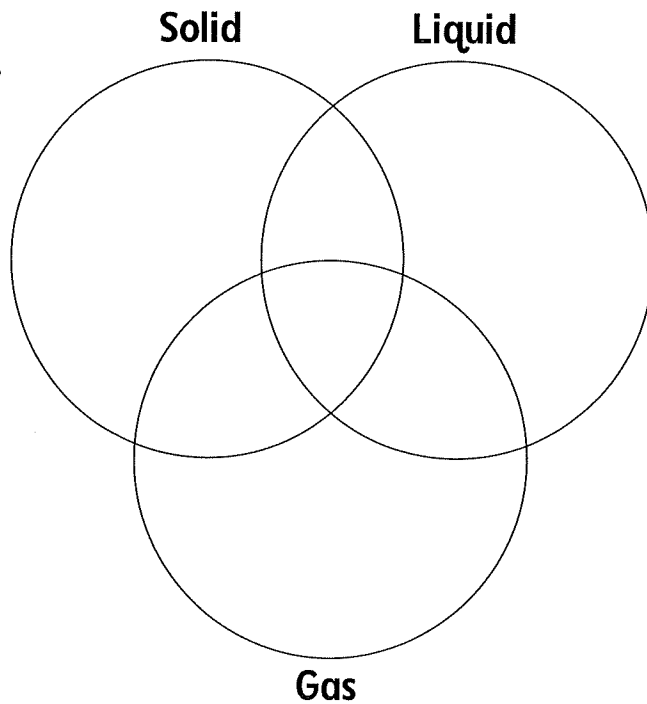
22. Which of the following refers to the temperature at which a liquid becomes a gas?

- A. dew point
- B. boiling point
- C. melting point
- D. freezing point

23. When a metal expands due to a temperature increase, this is referred to as

- A. plasma
- B. thermal expansion
- C. a chemical change
- D. thermal contraction

24. Complete the Venn diagram to compare and contrast a solid, a liquid, and a gas.



~~25. Create a mind map for matter. You may use lines to connect any two terms together. Use the following terms in your mind map:~~

