

Name: Answer

Date: \_\_\_\_\_

### Particle model and Phase changes

1. Why do we use the particle model of matter?

Explain how particles behave & are organized in the 3 phases of matter

2. Fill in the blanks using the word bank provided:

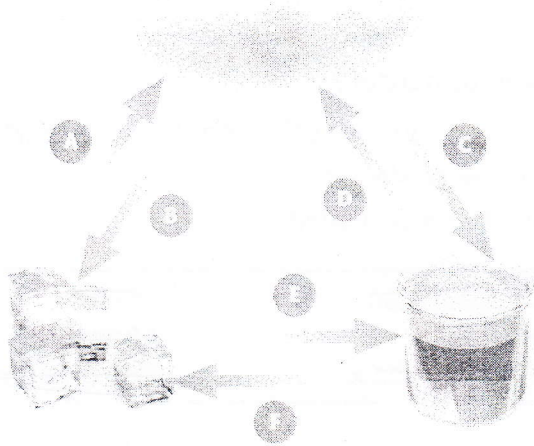
<u>Atoms (2)</u>	<u>Physical State</u>	<u>Matter</u>
<u>Molecules</u>	<u>Moving</u>	<u>Mutually</u>
<u>Particles (2)</u>	<u>Pure Substance</u>	<u>Temperature (2)</u>

- a) All matter is made up of tiny particles. These particles are atoms and molecules.
- b) Each pure substance possesses its own type of particles. For example, particles of sugar are different than water particles: they are not made up of the same atoms and are not the same size or mass.
- c) Particles are mutually attracted to each other. The closer the particles are, the greater **the forces of attraction**.
- d) The particles are always moving. The amount of movement depends on the physical state of the substance.
- e) Particles in which the temperature is higher move faster than particles whose temperature is lower.
- f)

3. What is the boiling point of pure water? 100°C

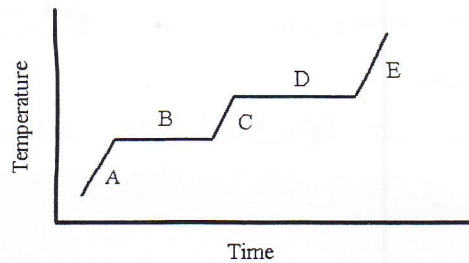
4. What is the melting point of pure water? 0°C

5. Each arrow in the following illustration represents a phase change. Write the type of phase change beside each letter.



- |    |                       |
|----|-----------------------|
| A: | <u>Sublimation</u>    |
| B: | <u>deposition</u>     |
| C: | <u>condensation</u>   |
| D: | <u>evaporation</u>    |
| E: | <u>melting</u>        |
| F: | <u>solidification</u> |

6. The phase diagram below is for that of pure water. Answer the following questions.



a) What do we call the two portions of the curve where the temperature remains constant (Band D)?

plateau.

b) During the time when the temperature is increasing, (A, C and E), how many phases are present?

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c) During what part of the curve do we find water in:

- its liquid state? c

- its solid state? a

- its gaseous state? e

- solid and liquid state? b