

# Mix and Flow of Matter *Key*

DATE:

NAME:

CLASS:

**UNIT 1**  
**ASSESSMENT**

## Unit 1 Test

**BLM 1-21**

**Goal** • Show your understanding of terms and concepts in Unit 1.

### What to Do

Carefully read the instructions before answering each set of questions.

### True/False

In the space provided, indicate whether each statement is true (T) or false (F). If you think that a statement is false, rewrite it to make it true.

- F 1. Homogeneous matter has ~~at least two~~ visible parts. *only one*
- T 2. All matter is made of tiny particles.
- T 3. Seawater is a solution.
- F 4. The particles in a mechanical mixture are ~~smaller~~ *larger* than the particles in a solution.
- F 5. ~~Cold water~~ contains less dissolved oxygen than the same amount of warm water. *Warm water*
- T 6. Distillation can be used to separate dissolved solids from a solution.
- F 7. Particles at a higher temperature move ~~more slowly~~ *faster* than particles at a lower temperature.
- F 8. Liquids ~~have a fixed shape.~~ *take the shape of the container they are on.*
- F 9. More salt dissolves in 100 mL of ~~cold water~~ *hot water* than in 100 mL of ~~hot water.~~ *Cold water.*
- T 10. Rate of dissolving is a measure of how fast a solute dissolves in a solvent.
- F 11. A ~~sugar cube dissolves faster than a~~ teaspoon of granulated sugar. *dissolves faster than a sugar cube.*

**Multiple Choice**

Circle the letter for the best answer

12. Which list contains all pure substances?

- (a) milk, water, copper  
(b) gold, oxygen, sugar  
(c) tea, salt, concrete  
(d) orange juice, silver, soda water

13. Sugar dissolved in water is classified as

- (a) a pure substance  
(b) a particle  
(c) a homogeneous mixture  
(d) a heterogeneous mixture

14. Which of the following is a mechanical mixture?

- (a) milk  
(b) water and oil  
(c) tap water  
(d) vinegar

15. Two samples of the same pure substance always behave the same because

- (a) they are both solutions  
(b) they are both homogeneous  
(c) they contain tiny particles  
(d) they contain identical particles

16. Which list contains only heterogeneous mixtures?

- (a) dirty water, mouthwash, bowl of mixed nuts  
(b) tea, perfume, clean air  
(c) salad dressing, smog, hand cream  
(d) homogenized milk, ketchup, concrete

17. Which of the following is a homogeneous mixture?

- (a) petroleum  
(b) antifreeze  
(c) gold ore  
(d) milk

18. In which situation are particles moving most rapidly?

- (a) a glass of cold tap water  
(b) an ice cube  
(c) a glass of hot tap water  
(d) a rubber ball

19. The method that is used to separate the parts of a liquid solution is called

- (a) evaporation  
(b) condensation  
(c) distillation  
(d) filtration

20. Which substance is the most soluble in water?

- (a) sugar  
(b) carbon dioxide  
(c) Epsom salts  
(d) ethyl alcohol

21. The acronym WHMIS stands for

- (a) Workplace Hazardous Materials Information System
- (b) Workplace Hazardous Materials Information Sheet
- (c) Workplace Hazardous Mixtures Information System
- (d) Workplace Hazardous Mixtures Information Sheet

22. Which of the following is not a solution?

- (a) pepper in water
- (b) carbon dioxide in water
- (c) zinc in copper
- (d) naphthalene in air

23. Pressure in a fluid is exerted

- (a) upward only
- (b) sideways only
- (c) downward only
- (d) in all directions

24. The force of a fluid that pushes an object up is

- (a) pneumatics
- (b) hydraulics
- (c) buoyancy
- (d) gravity

25. The pressure of a fluid varies with depth because of

- (a) volume
- (b) gravity
- (c) temperature
- (d) all of the above

26. The buoyant force on an object is equal to the weight of

- (a) the displaced fluid
- (b) the object
- (c) the container
- (d) the total volume of fluid

27. One factor that does not affect the viscosity of a liquid is

- (a) size of the particles
- (b) bulkiness of the particles
- (c) internal friction between particles
- (d) cost of the liquid

**Short Answers**

Answer the following questions in the space provided.

28. (a) What is the name of the process that is used to recover pure water from dirty water?

Distillation.

- (b) What two changes of state does this process involve?

Evaporation and Condensation

- (c) What is the name of the process that is used to remove salt from salty water?

Desalination.

29. (a) Use the particle model to describe how grains of sugar dissolve in a cup of water.

A group of water particles surround the particles of the sugar. The attractive forces allow the sugar particles to be pulled apart.

- (b) Use the particle model to explain why some materials dissolve while others do not.

A substance dissolves if its attractive forces toward the solvent is greater than to its own particles.

**Long Answer**

30. Explain how a hydraulic device or a pneumatic device can be used. Include a labelled illustration on the back of this page to clarify your explanation.

Hovercrafts are pneumatic devices that use compressed air to lift themselves off the water or the ground. The cushion of air beneath the hovercraft reduces the friction, allowing the gas turbines or engines attached to propellers to propel the hovercraft in any direction.