States of Matter and Mixtures — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button so it can be fixed.

1 **A cup of coffee is hot. How is energy transferred to the air?**

- **A** by evaporation only, from the top
- **B** by condensation on the cold cup
- **C** by radiation only, from the surface
- **D** by conduction and convection

Understand It with Pulse | Flag a mistake

2 **An ice cream cone melts in the Sun. What is happening to the particles in the ice cream?**

- A they gain energy and move more
- B they stop moving
- C they get smaller
- D they lose energy and slow down a lot

Understand It with Pulse | Flag a mistake

3 **Paintbrushes apply paint to a wall. What is the paint made of?**

- A a mixture of substances
- B pure water with nothing in it
- C a single element, nothing else
- D a single compound, nothing else

Understand It with Pulse | Flag a mistake

4 **A swimming pool holds water. Why does a person float in the pool?**

A their density is close to water

B the water pushes them down

C they are heavier than water and sink

D they are made of air

Understand It with Pulse | Flag a mistake

5 **A hot air balloon cools down. What happens?**

A it bursts

B it sinks

C it rises faster

D it stays still

Understand It with Pulse | Flag a mistake

6 **Lemons contain citric acid. What do acids make with metals?**

- A a salt and water, never hydrogen
- B a salt and oxygen gas
- C water only, nothing else
- D a salt and hydrogen

Understand It with Pulse | Flag a mistake

7 **Why do different dyes have different Rf values?**

- A they are all the same colour
- B they dissolve differently in the solvent
- C they move at the same speed
- D they have the same solubility in the solvent

Understand It with Pulse | Flag a mistake

8 **What colour flame does potassium give in a flame test?**

- A lilac
- B green
- C yellow
- D brick red

Understand It with Pulse | Flag a mistake

9 **Glass marbles in a tray are used as a model for particles in a solid. What do the marbles show?**

- A particles flow past each other easily
- B particles are far apart from each other
- C particles move freely through space
- D particles vibrate in fixed positions

Understand It with Pulse | Flag a mistake

10 **A sample containing potassium is put in a flame. What colour is the flame?**

- A lilac
- B orange-red flame
- C bright yellow
- D crimson red

Understand It with Pulse | Flag a mistake

11 **How many atoms of oxygen are there in one molecule of water?**

- A 3
- B 0
- C 2
- D 1

Understand It with Pulse | Flag a mistake

12 **What is the test for chlorine?**

A a lighted splint pops with a squeak

B damp litmus paper is bleached

C a glowing splint relights brightly

D limewater turns cloudy in the gas

Understand It with Pulse | Flag a mistake

13 **In a chromatogram, a spot moves 3 cm and the solvent moves 12 cm. What is the Rf value?**

A 0.35

B 0.4

C 0.25

D 0.5

Understand It with Pulse | Flag a mistake

14 **In which state can particles flow but stay close together?**

A solid

B liquid

C gas

D plasma

Understand It with Pulse | Flag a mistake

15 **What does an Rf value of 0 mean?**

A the solvent did not move at all

B the spot did not move

C the spot moved with the solvent

D the spot dissolved completely

Understand It with Pulse | Flag a mistake

16 **How do you test for carbon dioxide gas?**

A it turns litmus blue

B it burns with a pop

C it turns limewater cloudy

D it relights a glowing splint

Understand It with Pulse | Flag a mistake

17 **A sample containing calcium is put in a flame. What colour is the flame?**

A orange-red

B crimson red

C pale lilac

D bright yellow

Understand It with Pulse | Flag a mistake

18 **Which gas is given off when an acid reacts with a carbonate?**

A hydrogen gas from the acid

B chlorine gas from the salt

C oxygen gas from the air

D carbon dioxide

Understand It with Pulse | Flag a mistake

19 **In a chromatogram, a spot moves 4 cm and the solvent moves 12 cm. What is the Rf value?**

A 0.33

B 0.67

C 0.48

D 0.43

Understand It with Pulse | Flag a mistake

20 **In which state do particles vibrate in fixed positions?**

A plasma

B solid

C gas

D liquid

Understand It with Pulse | Flag a mistake

21 **What is chromatography used for in the food industry?**

A heating food more quickly

B keeping food cold longer

C checking dyes in food

D making food taste better

Understand It with Pulse | Flag a mistake

22 **A sample containing sodium is put in a flame. What colour is the flame?**

- A yellow
- B pale lilac
- C crimson red
- D orange-red flame

Understand It with Pulse | Flag a mistake

23 **Which change of state is endothermic?**

- A melting
- B solidifying
- C freezing
- D condensing

Understand It with Pulse | Flag a mistake

24 **How many atoms of hydrogen are there in one molecule of ammonia?**

A 2

B 5

C 4

D 3

Understand It with Pulse | Flag a mistake

25 **In a chromatogram, a spot moves 2 cm and the solvent moves 12 cm. What is the Rf value?**

A 0.32

B 0.27

C 0.17

D 0.33

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. D
2. A
3. A
4. A
5. B
6. D
7. B
8. A
9. D
10. A
11. D
12. B
13. C
14. B
15. B
16. C
17. A
18. D
19. A
20. B
21. C
22. A
23. A
24. D
25. C

© 2026 Brett Robbins. All Rights Reserved.