Unit One: Matter and Energy

Part 1 Multiple choice

1. What is the definition of matter?

a) Anything that has weight

b) Anything that has mass and occupies space

c) Anything that can be seen

d) Anything that has volume

2. Which of the following is NOT a common state of matter?

a) Solid b) Liquid

c) Gas d) Wood

3. What property do solids and liquids share?

a) Definite shape b) Ability to flow

c) Definite volume d) Compressibility

4. Why are liquids and gases classified as fluids?

a) Because they have mass

b) Because they can flow

c) Because they are compressible

d) Because they have definite volume

5. What happens to the volume of a gas when it is compressed?

a) Increases b) Decreases

c) Remains constant d) Becomes zero

6. What is diffusion?

a) Movement of particles from low to high concentration

b) Movement of particles from high to low concentration

c) Mixing of two solids

d) Compression of gases

7. In which state does diffusion occur fastest?

a) Solids b) Liquids

c) Gases d) Plasma

8. What is Brownian motion?

a) Regular movement of particles

b) Random movement of large suspended particles

c) Flow of liquids

d) Compression of gases

9. What is the fourth state of matter?

a) Solid b) Liquid

c) Gas d) Plasma

10. Which of these is a physical change?

a) Burning wood b) Rusting iron

c) Melting ice d) Cooking food

11. Which of these is a chemical change?

a) Breaking glass b) Dissolving sugar

c) Cutting paper d) Burning paper

12. What indicates a chemical reaction has occurred?

a) Change in shape b) Change in size

c) Formation of new substances

d) Change in temperature only

13. Which is NOT an indicator of chemical reaction?

a) Color change b) Gas formation

c) Change in mass d) Precipitate formation

14. What happens when baking soda reacts with vinegar?

a) Formation of precipitate b) Color change

c) Gas evolution d) Temperature decrease

15. Why do solids have definite shape?

a) Weak attractive forces

b) Strong attractive forces between particles

c) Large distances between particles

d) High compressibility

16. What is compressibility?

a) Ability to flow

b) Ability to change shape

c) Ability to reduce volume under pressure

d) Ability to diffuse

17. Which has the strongest attractive forces between particles?

a) Solids b) Liquids

c) Gases d) Plasma

18. What is the main difference between boiling and evaporation?

a) Boiling occurs at surface only

b) Evaporation occurs at boiling point only

c) Boiling occurs throughout liquid at specific temperature

d) Evaporation produces bubbles

19. Which factor does NOT affect evaporation rate?

a) Temperature b) Surface area

c) Color of liquid d) Air currents

20. What is the boiling point of water at normal atmospheric pressure?

a) 0°C b) 50°C

c) 100°C d) 150°C

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