Unit 2: Matter

28 MCQs. Correct option in bold. 1 mark each.

1. During a phase transition, the temperature of a pure substance
A. increases steadily **B. remains constant**
C. decreases steadily D. fluctuates

2. Internal energy is made up of kinetic energy and
A. sound energy B. electrical energy
C. potential energy D. chemical energy only

3. What happens to the internal energy of a substance during melting?
A. It increases B. It decreases
C. It stays the same D. It fluctuates

4. When energy is added to a solid at its melting point, it increases the
A. mass of the particles B. kinetic energy of the particles
C. temperature of the solid **D. potential energy of the particles**

5. The change of a solid directly into a gas is called
A. sublimation B. condensation
C. freezing D. melting

6. The change of a gas directly into a solid is called
A. condensation B. sublimation
C. deposition D. evaporation

7. During condensation, the particles in a gas
A. gain energy and move slower B. gain energy and move faster
C. lose energy and move faster **D. lose energy and move slower**

8. In a heating curve, the horizontal part where a solid melts represents the latent heat of
A. vaporization **B. fusion**
C. condensation D. sublimation

9. In a heating curve, the horizontal part where a liquid boils represents the latent heat of
A. sublimation B. fusion
C. freezing **D. vaporization**

10. In the flat regions of a heating curve, the absorbed energy is used to
A. overcome intermolecular forces
B. increase the kinetic energy of the particles
C. increase the temperature
D. increase the mass

11. Evaporation is a process occurring
A. only in gases
B. only at 100 °C
C. at the surface of a liquid at any temperature below the boiling point
D. throughout the liquid at the boiling point

12. Boiling occurs
A. at any temperature
B. throughout the liquid at a fixed temperature
C. only at room temperature
D. only at the surface

13. Evaporation causes cooling because the molecules left behind have
A. lower average kinetic energy B. more mass
C. less mass D. higher average kinetic energy

14. Evaporation differs from boiling because evaporation
A. occurs throughout the liquid
B. forms bubbles
C. occurs at the surface of a liquid at any temperature
D. occurs only at a fixed temperature

15. Increasing the external pressure on a liquid
A. makes it freeze B. does not change its boiling point
C. decreases its boiling point **D. increases its boiling point**

16. A pressure cooker cooks food faster because it
A. cools the food **B. raises the boiling point of water**
C. removes the water D. lowers the boiling point of water

17. Boyle's law states that at constant temperature the volume of a fixed amount of gas is
A. unrelated to its pressure B. directly proportional to its pressure
C. directly proportional to its temperature **D. inversely proportional to its pressure**

18. Boyle's law is expressed as
A. V/n = constant B. P/T = constant
C. PV = constant D. V/T = constant

19. Charles's law states that at constant pressure the volume of a fixed amount of gas is
A. directly proportional to its absolute temperature
B. inversely proportional to its pressure
C. independent of temperature
D. inversely proportional to its absolute temperature

20. Charles's law is expressed as
A. V/n = constant **B. V/T = constant**
C. PV = constant D. PT = constant

21. Avogadro's law states that at constant temperature and pressure the volume of a gas is
A. independent of the number of moles
B. proportional to pressure
C. directly proportional to the number of moles
D. inversely proportional to the number of moles

22. Avogadro's law is expressed as
A. V/n = constant B. V/T = constant
C. P/n = constant D. PV = constant

23. Graham's law states that the rate of diffusion is
A. inversely proportional to the molar mass
B. independent of the molar mass
C. directly proportional to the molar mass
D. inversely proportional to the square root of the molar mass

24. Lighter gas molecules diffuse
A. slower than heavier ones **B. faster than heavier ones**
C. not at all D. at the same rate as heavier ones

25. Which factors affect the rate of diffusion of gases?
A. Molecular mass and temperature B. Colour only
C. Volume of the container only D. Number of atoms only

26. Sublimation is the process in which a solid changes
A. into a gas through the liquid state
B. into a liquid
C. directly into vapour without passing through the liquid state
D. into a solid

27. Which of the following easily undergoes sublimation?
A. Iron B. Sodium chloride
C. Sand **D. Naphthalene**

28. The diffusion of medicine in the body is important because it
A. increases the molecular mass of the medicine
B. ensures the medicine reaches all parts of the body
C. controls the temperature of the medicine
D. keeps the medicine in one place