Al Amal Learning Center

Class 9 Chemistry Chapter 2 Advanced MCQ Quiz Online | Level 3

Class 9 Chemistry · Chapter 2: Matter

Name: _____ Date: _____ Score: _____ / 40

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1. A student heats water in a beaker and observes bubbles forming as steam escapes. Which statement best describes this change?

A) A new substance is formed
B) Only the physical state changes while the chemical composition stays the same
C) The atoms of water are destroyed
D) Water changes into an element

2. A gas is heated to a very high temperature and begins to conduct electricity and respond to magnetic fields. Which state of matter has formed?

A) Liquid crystal
B) Solid
C) Plasma
D) Bose-Einstein condensate

3. On heating, a crystalline solid changes into a cloudy fluid that shows some properties of solids, and it becomes clear on further heating. The cloudy fluid is a:

A) Liquid crystal
B) Plasma
C) Bose-Einstein condensate
D) Gas

4. A syringe is filled separately with a gas, a liquid and a solid. When the plunger is pushed, which sample will be compressed the most?

A) Solid
B) Liquid
C) Gas
D) All equally

5. When separate atoms are cooled to a temperature very close to absolute zero, a new state of matter is formed. It is called:

A) Plasma
B) Liquid crystal
C) Gas
D) Bose-Einstein condensate

6. A sample has high density, cannot flow and cannot be compressed. The sample is a:

A) Gas
B) Solid
C) Liquid
D) Plasma

7. Tea contains milk, water, tea leaves and sugar. It is classified as a mixture because:

A) Its components are physically combined and keep their own chemical composition
B) Its components are chemically bonded into a new substance
C) It consists of only one type of atom
D) All its components have the same atomic number

8. Hydrogen and oxygen react chemically to form water. Water is classified as a(n):

A) Element
B) Mixture
C) Suspension
D) Compound

9. A pure sample consists of atoms that all have the same atomic number and it cannot be broken down by chemical means. The sample is a(n):

A) Compound
B) Element
C) Mixture
D) Solution

10. A student claims that the carbon dioxide we exhale is a mixture of carbon and oxygen. This claim is wrong because carbon dioxide:

A) Consists of only one type of atom
B) Can be separated by filtration
C) Has its atoms chemically combined to form a new substance
D) Is a solution

11. An engineer needs a carbon-based lubricant for machine parts. Which allotrope is the best choice and why?

A) Diamond, because it is the hardest substance
B) Graphite, because its layers slide over each other due to weak forces between them
C) Buckyball, because it is hollow
D) Diamond, because it has free electrons

12. A jeweller tests a carbon allotrope that is the hardest known substance, has a very high melting point and does not conduct electricity. It is:

A) Graphite
B) Buckyball
C) Diamond
D) Fullerene

13. A carbon sample does not conduct electricity, and each of its carbon atoms is bonded to four other carbon atoms. This is because:

A) No free electrons are available
B) Weak forces exist between its layers
C) It has a hollow structure
D) It is a compound

14. A hollow, football-like form of carbon made of 60 carbon atoms, with 20 hexagons and 12 pentagons, is called:

A) Graphite
B) Diamond
C) Amalgam
D) Buckyball

15. Diamond, graphite and buckyballs are all pure carbon but have different arrangements of atoms. This property is called:

A) Isotopy
B) Allotropy
C) Ionization
D) Crystallization

16. A soft drink contains water, sugar, salts and carbon dioxide. Which component is the solvent?

A) Sugar
B) Salts
C) Water
D) Carbon dioxide

17. Air is a gaseous solution of nitrogen, oxygen, carbon dioxide and trace gases. Which gas acts as the solvent?

A) Nitrogen
B) Oxygen
C) Carbon dioxide
D) Argon

18. A dentist prepares a filling by dissolving a metal in liquid mercury. This type of solution is called:

A) Brine
B) Suspension
C) Colloid
D) Amalgam

19. Fog is a solution in which liquid water is dissolved in air. Which component is the solvent?

A) Liquid water
B) Air
C) Sunlight
D) Dust

20. A student keeps adding sugar to 100 g of water at a constant temperature and stirs. After a while some sugar settles at the bottom and does not dissolve. The solution is now:

A) Unsaturated
B) Supersaturated
C) Saturated
D) Dilute

21. A saturated sugar solution with some undissolved sugar at the bottom is kept at constant temperature. Which statement is correct at the particle level?

A) Dissolving and crystallization have both stopped
B) Only dissolving is taking place
C) The rate of dissolving equals the rate of crystallization
D) Only crystallization is taking place

22. A crystal of sodium thiosulphate is added to a solution and crystallization starts immediately. When it stops, a saturated solution with crystals is left. The original solution was:

A) Supersaturated
B) Saturated
C) Unsaturated
D) Dilute

23. A saturated solution prepared at a high temperature is cooled, and the excess solute crystallizes out. The solution left behind is:

A) Unsaturated
B) Supersaturated
C) Pure solvent
D) Saturated

24. At a fixed temperature, a third spoonful of sugar dissolves completely in 100 g of water. The solution is:

A) Saturated
B) Unsaturated
C) Supersaturated
D) Heterogeneous

25. Brine is a concentrated solution of salt in water. What happens when more water is added to it?

A) It becomes more concentrated
B) It becomes saturated
C) It becomes supersaturated
D) It is diluted and its concentration decreases

26. The solubility (g/100 g of water) of four salts at 20 °C and 100 °C is: NaCl 36.5 and 39.2, KCl 34.7 and 56, NH?Cl 37.5 and 77, Ca(OH)? 0.173 and 0.066. Whose solubility decreases on heating?

A) Ca(OH)?
B) NaCl
C) KCl
D) NH?Cl

27. At 100 °C, 70 g of NH?Cl is dissolved in 100 g of water. The solution is cooled to 20 °C, where the solubility of NH?Cl is 37.5 g per 100 g of water. How much NH?Cl crystallizes out?

A) 32.5 g
B) 37.5 g
C) 70 g
D) 77 g

28. A saturated solution of calcium hydroxide is heated. What will be observed?

A) More Ca(OH)? dissolves
B) There is no change
C) The solution turns into a colloid
D) Some solid separates out of the solution

29. A mixture passes through normal filter paper but not through ultra-filter paper, and it scatters a beam of light. The mixture is a:

A) Solution
B) Suspension
C) Colloid
D) Compound

30. A light beam is passed through two clear-looking liquids, and its path is visible in only one of them. What can be concluded?

A) Both are suspensions
B) Both are true solutions
C) The liquid showing the path is a true solution
D) The liquid showing the path is a colloid

31. A pharmacist shakes a bottle of milk of magnesia before use. This is done because it is:

A) A suspension whose particles settle on standing
B) A solution that evaporates
C) A colloid that turns solid
D) A compound that separates into elements

32. A liquid contains particles of about 5000 nm diameter that settle when it is left standing. The liquid is a:

A) Solution
B) Suspension
C) Colloid
D) Compound

33. Sea water, milk and muddy water are passed through ultra-filter paper. Which of them leave a residue on the paper?

A) Sea water only
B) Sea water and milk
C) Milk and muddy water
D) None of them

34. A mixture has particles of 0.5 nm diameter that never settle and pass through ultra-filter paper. The mixture is a:

A) Colloid
B) Suspension
C) Heterogeneous mixture
D) True solution

35. Brass, bronze and steel are formed by mixing different metals. They are examples of:

A) Solid solutions
B) Liquid solutions
C) Gaseous solutions
D) Aqueous solutions

36. In a carbonated drink, carbon dioxide gas is dissolved in water. What type of solution is this?

A) Gaseous solution
B) Liquid solution
C) Solid solution
D) Suspension

37. Smoke consists of tiny carbon particles spread in air. Which type of solution is it?

A) Liquid solution
B) Solid solution
C) Gaseous solution
D) Suspension

38. Most solutions used in laboratories are aqueous. Water is called the universal solvent because it:

A) Dissolves the majority of compounds present in the earth's crust
B) Is the only liquid available
C) Never contains any solute
D) Forms suspensions with all substances

39. An argon atom has 18 protons. What is the atomic number of argon?

A) 36
B) 18
C) 9
D) 22

40. Which formula represents the carbon dioxide gas that we exhale?

A) CO
B) C?O
C) O?C
D) CO?

Answer key

1-B 2-C 3-A 4-C 5-D 6-B 7-A 8-D 9-B 10-C

11-B 12-C 13-A 14-D 15-B 16-C 17-A 18-D 19-B 20-C

21-C 22-A 23-D 24-B 25-D 26-A 27-A 28-D 29-C 30-D

31-A 32-B 33-C 34-D 35-A 36-B 37-C 38-A 39-B 40-D