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Solution: 18

Colloid

Solution: 19

Soap solution

Solution: 20

(a) Colloidal; true

(b) Heterogeneous; centrifugation

Solution: 21

(a) Solute-The substance which is dissolved in a liquid to make a solution is called as solute.

(b) Solvent-The liquid in which solute is dissolved is known as solvent.

Solution: 22

A solution is a homogeneous mixture of two or more substances whereas a colloid is a kind of solution in which the size of solute particles is intermediate between those in true solutions and those in suspensions.

Solution: 23

A colloid is a kind of solution in which the size of solute particles is intermediate between those in true solutions and those in suspensions whereas a suspension is a heterogeneous mixture in which the small particles of a solid are spread throughout a liquid without dissolving in it.

Solution: 24

A true solution does not scatter a beam of light passing through it but a colloidal solution scatters a beam of light passing through it and renders its path visible. A true solution is a homogeneous mixture of two or more substances whereas a colloidal solution is a kind of solution in which the size of solute particles is intermediate between those in true solutions and those in suspensions and is a heterogeneous mixture.

Solution: 25

True Solutions - Salt solution and sugar solution

Colloidal Solution - Starch solution, Ink, Blood

Solution: 26

The given solution is taken in a beaker. Then, a strong beam of light is allowed to fall on the solution from one side of the beaker in a dark room. If the beam of light is visible in the solution, then it is a colloidal solution.

Solution: 27

The path of light beam is illuminated and becomes visible.

Solution: 28

A true solution can be distinguished from a colloidal solution by experimenting Tyndall effect. A true solution does not scatter a beam of light passing through it but a colloidal solution scatters a beam of light passing through it.

Solution: 29

The particles of a suspension cannot pass through a filter paper whereas particles of colloids can easily pass through filter paper. Colloidal solutions are quite stable whereas suspensions are very unstable.

Solution: 30

Both the given solutions will be kept stationary in different beakers for some time.

The beaker in which the dissolved particles settle down after some time is a suspension and another one is a solution.

Solution: 31

Starch solution and milk will show Tyndall effect.

This is because in a milk solution and starch solution (colloidal solutions) the size of solute particles is big enough to scatter the light passing through it.

Solution: 32

Types of solution-

(i) Solid in solid.

Example - Brass

(ii) Solid in a liquid

Example - Tincture of iodine

(iii) Liquid in liquid

Example - ethanoic acid

(iv) Gas in a liquid

Example - CO₂ in water

(v) gas in gas

Example - Air

Solution: 33

Solutions - Brine

Suspensions - Chalk water mixture, milk of magnesia, Muddy river water

Colloids - Milk, blood, ink, shaving cream, smoke in air, soda water

Solution: 34

(a) Sol - Sol is a colloid in which tiny solid particles are dispersed in a liquid medium. Examples are ink and soap solution

(b) Aerosol- Aerosol is a colloid in which a solid or liquid is dispersed in a gas. Examples are hairspray and fog.

(c) Emulsion - An emulsion is a colloid in which minute droplets of one liquid are dispersed in another liquid which is not miscible with it. Examples are milk and butter.

(d) Foam- A foam is a colloid in which a gas is dispersed in a liquid medium. Examples are soap bubbles and shaving cream.

Solution: 35

The concentration of a solution is the amount of solute present in given quantity of the solution.

Solution: 36

If a saturated solution is heated to a higher temperature, then it becomes unsaturated.

If a saturated solution is cooled to a lower temperature, then some of its dissolved solute will separate out in the form of solid crystals.

Solution: 37

According to question-

21.5 g of NaCl dissolves in 60 g of water.

So, amount of NaCl which gets dissolved in 100 g of water = $21.5 \times \frac{100}{60} = 35.8$ g

Thus, the solubility of NaCl is 35.8 g at 25°C.

Solution: 38

According to question-

9.72 g of KCl dissolves in 30 g of water.

So, amount of KCl which gets dissolved in 100 g of water = $9.72 \times \frac{100}{30} = 32.4$ g

Thus, the solubility of KCl = 32.4 g

Solution: 39

i. Cooking of food - Chemical change

ii. Boiling of water - Physical change

iii. Cutting of trees - Physical change

iv. Dissolving salt in water - Physical change

v. Digestion of food - Chemical change

vi. Melting of ice- Physical change

Solution: 40

(a) Burning of magnesium wire - Chemical change

(b) Freezing of water - Physical change

(c) Rusting of iron - Chemical change

(d) Glowing of electric bulb - Physical change

Solution: 41

(a) Formation of curd from milk - Chemical change

(b) Condensation of steam - Physical change

(c) Growth of plant - Chemical change

(d) Breaking of a glass tumbler - Physical change

***** END *****