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Solution: 71

Steam does not belong to the set. This is because all other are elements while steam is a compound.

Solution: 72

- (a) B is a mixture (Fe + S)
- (b) C is a compound (Iron sulphide)
- (c) (i) D is hydrogen sulphide gas
- (ii) E is hydrogen gas
- (d) Gas D has a rotten egg like smell.
- (e) Gas E burns with a 'pop' sound.

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Solution: 73

- (a) X must be a mixture. Salt Solution is a substance like X.
- (b) Y must be an element. Oxygen is a substance like Y.
- (c) Z must be a compound. Water is a substance like Z.
- (d) Formation of Z (a compound) involves absorption or release of an appreciable amount of energy.
- (e) The three groups are metals, non-metals and metalloids.

Solution: 74

- (a) Group of materials P is elements.
- (b) Q is a non-metal. Example - Carbon and sulphur.
- (c) R is a metal. Example - Copper and Aluminium.
- (d) S is a metalloid. Example - Boron and Silicon.
- (e) R (metals) are malleable and ductile.

Solution: 75

- (a) B could be an element. It is mercury.
- (b) C could be the mixture. It is a salt Solution.
- (c) A could be a compound. It is an alcohol.
- (d) Solid D is Sodium Chloride.
- (e) Liquid E is water.

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Solution: 1

- (a) Solution
- (b) Suspension

Solution: 2

Solution.

Solution: 3

Soap Solution will scatter light because in true Solution i.e. sugar Solution, the solute particles are so small that they cannot scatter light rays while in soap Solution particles are big enough to scatter light.

Solution: 4

Heterogeneous.

Solution: 5

Percentage method

Solution: 6

Mass of water = Mass of Solution - Mass of salt (solute)
= 100 - 15 = 85 g

Solution: 7

$$\text{Concentration of solution} = \frac{\text{Volume of solute}}{\text{Volume of solution}} \times 100$$

So, Volume of Solution = 100 ml

Volume of water = Volume of Solution - Volume of solute (alcohol)
= 100 - 12 = 88 ml

Solution: 8

(a) A 5 per cent sugar Solution means that 5g of sugar is dissolved in 95 g of water.

Solution: 9

(a) A 15% alcohol Solution means 15mL alcohol and 85mL water

Solution: 10

$$\text{Concentration} = \frac{\text{Mass of solute}}{\text{Mass of solution}} \times 100$$

Given: Mass of salt = 2.5 g and mass of water = 50 g

So, total mass of solution = 50 g + 2.5g = 52.5 g.

Hence,

$$\text{Concentration} = \frac{2.5}{52.5} \times 100 = 4.76\%$$

Solution: 11

Given mass of urea = 16 g

And, mass of Solution = 120 g

So,

$$\begin{aligned}\text{Concentration of solution} &= \frac{\text{Mass of solute}}{\text{Mass of solution}} \times 100 \\ &= \frac{16}{120} \times 100 = 13.33\%\end{aligned}$$

Solution: 12

Given volume of alcohol = 5.6 mL

And, volume of water = 75 mL

So, volume of Solution = 75 mL + 5.6 mL = 80.6 mL

$$\begin{aligned}\text{Concentration of solution} &= \frac{\text{Volume of solute}}{\text{Volume of solution}} \times 100 \\ &= \frac{5.6 \text{ mL}}{80.6 \text{ mL}} \times 100 = 6.9\%\end{aligned}$$

Solution: 13

Given volume of acetone = 25 mL

And, volume of Solution = 150 mL

$$\begin{aligned}\text{Concentration of solution} &= \frac{\text{Volume of solute}}{\text{Volume of solution}} \times 100 \\ &= \frac{25}{150} \times 100 = 16.6 \%\end{aligned}$$

Solution: 14

When the temperature of a saturated sugar Solution is increased, it becomes unsaturated.

Solution: 15

Unsaturated Solution contains less solute at a given temperature and pressure.

Solution: 16

Physical change-Vaporisation(water changes to water vapour or steam)

Chemical change-Electrolysis(i.e.water forms hydrogen and oxygen)

Solution: 17

(a) True

(b) False

***** END *****