CHEMISTRY CLASS 12 BATCH

SOLUTIONS

DPP-01

1. Which of the following is not a binary solution?
(1) Pure water + Sugar
(2) Air
(3) Mixture of benzene and toluene
(4) Mixture of ethanol and methanol

2. It sea water is assumed to contain 40g of salt per 200g of sea water then percentage by mass of salt present is
(1) 15% (2) 40%
(3) 20% (4) 10%

3. If 2 moles of $CaCO_3$ is dissolved in 900g of water then percentage by mass of solution formed is
(1) 36.36% (2) 9.9%
(3) 18.18% (4) 11.75%

4. 0.5 moles of benzene was dissolved in 2 moles of toluene. Find mass % of benzene in the solution formed
(1) 25.48% (2) 9.52%
(3) 15.92% (4) 17.48%

5. 60 ml of liquid A is mixed with another liquid B and the solution was made upto 300 ml. Find volume % of liquid B in the solution formed
(1) 40% (2) 60%
(3) 20% (4) 80%

6. A solute A was put into a solvent to make a solution of mass 240 gram. What should be the mass of A so that its mass % in solution is 40?
(1) 96g (2) 24g
(3) 48g (4) 36g

7. How much solute should be dissolved in 20 ml of solution so that mass by volume % of solute is 30?
(1) 6g
(2) 4g
(3) 8g
(4) 10g

8. What should be the mass by volume % of a solution which is 20% mass by mass?
(density of the solution is 1.02 g/ml)
(1) 13.2% (2) 10.2%
(3) 12.4% (4) 20.4%

9. Calculate the mass of cane sugar required to prepare 250 g of 25% cane sugar solution with water.
(1) 6.25 g (2) 187.5 g
(3) 18.75 g (4) 62.5 g

10. What is the concentration in mass/volume if 67g of solute is dissolved to make 1.2 litre of solution?
(1) 6% (2) 8%
(3) 24% (4) 12%

11. What amount of solute is dissolved in 0.5 L of solution to make it 20% (w/v)?
(1) 120g (2) 150g
(3) 100g (4) 200g

12. An aqueous solution of NaOH is 20% mass by mass. Find the mass of NaOH is 200g of solution.
(1) 40g (2) 60g
(3) 20g (4) 80g

13. A solution is made by mixing 50g of water 20g of salt and 30g of sugar. Mass % of salt and sugar are respectively.
(1) 10, 40 (2) 20, 40
(3) 20, 30 (4) 50, 50

14. Find mass by mass % of a solution of 20 ml volume having solute of mass 4g.
(density of solution = 1.4 g/ml)
(1) 7.14%
(2) 8.2%
(3) 9.64%
(4) 14.28%

15. What is the number of ppm of NaCl in the solution with 117g of NaCl dissolved in 500 mL of water?
(1) 1.89×10^5 (2) 2.78×10^5
(3) 9.12×10^5 (4) 6.54×10^5

16. What is the concentration of mercury in ppm if 3g mercury is found in 15kg sample of ocean water?
(1) 300 (2) 400
(3) 500 (4) 200

17. If 3.0 mg of Cr^{+6} is dissolved in 3 L of water, find the concentration of Cr^{+6} in ppm.
(1) 2 ppm (2) 1 ppm
(3) 3 ppm (4) 9 ppm

18. What is the number of ppm of methanol dissolved in 68g of water (Taking mass of methanol 32gm)
(1) 160000 (2) 480000
(3) 320000 (4) 520000

19. A tank contains 5 moles of oxygen, 2 moles of nitrogen and 20g of hydrogen at room temperature. Find the mole fraction of hydrogen.
(1) $\frac{5}{17}$ (2) $\frac{2}{15}$
(3) $\frac{8}{15}$ (4) $\frac{10}{17}$

20. A room has oxygen and nitrogen in mass ratio of 8 : 7. Find mole fraction of oxygen gas.
(1) 0.2 (2) 0.3
(3) 0.5 (4) 0.8

21. An aqueous solution of ethanol contains 23g of ethanol dissolved in 90g of water. Find mole fraction of ethanol in the solution.
(1) $\frac{3}{4}$
(2) $\frac{3}{5}$
(3) $\frac{2}{7}$
(4) $\frac{1}{11}$

22. A liquid solution consists of three liquids A, B and C with mole fractions of A = 0.3 and mole fraction of B = 0.2. Find mole fraction of C.
(1) 0.5 (2) 0.2
(3) 0.3 (4) 0.7

23. Find molarity of a sample of pure water. Consider density = 1 g/ml.
(1) 27.7 (2) 33.3
(3) 55.5 (4) 11.1

24. A solution contains 50g of $CaCO_3$ dissolved in 3 liters of water. Find the molarity of the solution formed.
(1) $\frac{1}{2}$ (2) $\frac{1}{3}$
(3) $\frac{1}{6}$ (4) $\frac{1}{4}$

25. The concentration of $CaCl_2$ solution is 0.5 mole L^{-1}. Find the moles of $CaCl_2$ in 500 ml in the solution.
(1) 0.25 (2) 0.45
(3) 0.3 (4) 0.5

26. What is the molality of a solution containing 2 moles of a solute dissolved in 500g of a solvent?
(1) 3 (2) 2
(3) 1 (4) 4

27. An aqueous solution of glucose is prepared by dissolving 45 g of glucose in 1 liter of water. Find molality of solution formed.
(1) $\frac{1}{4}$ (2) $\frac{3}{5}$
(3) $\frac{1}{3}$ (4) $\frac{2}{3}$

28. A mixture of H_2 and He contains 3 moles of H_2 & 10 moles of He. Find molality of H_2.
(1) 35 (2) 82
(3) 75 (4) 40

29. If a gas mixture of two gases. A and B contains gas A of mole fraction 0.3. Find molality of A.
(Molar mass of A = 10g ; B = 20g)
(1) 21.42 (2) 6.7
(3) 12.14 (4) 8.21

ANSWER KEY

1.	(2)
2.	(3)
3.	(3)
4.	(4)
5.	(4)
6.	(1)
7.	(1)
8.	(4)
9.	(4)
10.	(1)
11.	(3)
12.	(1)
13.	(3)
14.	(4)
15.	(1)
16.	(4)
17.	(2)
18.	(3)
19.	(4)
20.	(3)
21.	(4)
22.	(1)
23.	(3)
24.	(3)
25.	(1)
26.	(4)
27.	(1)
28.	(3)
29.	(1)

NOTE THE FOLLOWING QUE IN YOUR NOTES COPY

25.3 g of sodium carbonate, Na_2CO_3 is dissolved in enough water to make 250 mL of solution water to make 250 mL of solution. If sodium carbonate dissociates completely, molar concentration of sodium ion, Na^+ and carbonate ion, CO_3^{2-} are respectively (Molar mas of Na_2CO_3 = 106 g mol^{-1})

[CBSE AIPMT 2010, Single Correct, Medium]