LAKSHYA (JEE)

Solution

DPP-01

1. Density of a 2.05 M solution of acetic acid in water is 1.02 g mL^{-1}. The molality of the solution is
   (A) 1.14 mol kg^{-1} (B) 3.28 mol kg^{-1}
   (C) 2.009 mol kg^{-1} (D) 0.44 mol kg^{-1}

2. How many grams of glucose should be dissolved to make one litre solution of 10%(w/v) glucose-
   (A) 10 g   (B) 180 g
   (C) 100 g   (D) 1.8 g

3. A 5.2 molal aqueous solution of methyl alcohol CH_3OH is supplied. What is the mole fraction of methyl alcohol in the solution?
   (A) 0.190   (B) 0.086
   (C) 0.050   (D) 0.100

4. The density of a solution prepared by dissolving 120 g of urea (molar mass = 60 u) in 1000 g of water is 1.15 g mL^{-1}. The molarity of the solution is
   (A) 0.50 M   (B) 1.78 M
   (C) 1.02 M   (D) 2.05 M

5. 6.02×10^{20} molecules of urea are present in 100 mL of its solution. The concentration of urea solution is
   (A) 0.001 M   (B) 0.1 M
   (C) 0.02 M   (D) 0.01 M

6. Dissolving 120 g of urea (mol. wt. = 60) in 1000 g of water gave a solution of density 1.15 g mL^{-1}. The molarity of the solution is____.
   (A) 1.78 M   (B) 2.00 M
   (C) 2.05 M   (D) 2.22 M

7. 29.2% (w/w) HCl stock solution has density of 1.25 g mL^{-1}. The molecular weight of HCl is 36.5 g mol^{-1}. The volume (mL) of stock solution required to prepare a 200 mL solution of 0.4 M HCl is ___.

8. 5.85 g of NaCl are dissolved in 90 g of water. The mole fraction of NaCl is-
   (A) 0.1   (B) 0.01
   (C) 0.2   (D) 0.0196

9. 40% w/V NaCl solution (specific gravity = 1.12) is equivalent to
   (A) 3.57×10^5 ppm (B) 3.57×10^6 ppm
   (C) 1×10^6 ppm   (D) 4×10^5 ppm

10. The density of 1 M solution of NaCl is 1.0585 g mL^{-1}. The molality of the solution is
    (A) 1.0585   (B) 1.00
    (C) 0.10   (D) 0.0585

ANSWERS

1. (C)
2. (C)
3. (B)
4. (D)
5. (D)
6. (C)
7. (8)
8. (D)
9. (A)
10. (B)

Note – If you have any query/issue

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