# Yakeen NEET 2.0 2026

Physical Chemistry By Amit Mahajan Sir

Solutions

DPP: 1

Q1 Homogeneous mixture of two or more than two components is called
(A) Solute
(B) Solvent
(C) Both (A) & (B)
(D) Solution

Q2 Which of the following is an example of gaseous solution?
(A) Camphor in nitrogen gas
(B) Solution of hydrogen in palladium
(C) Chloroform mixed with nitrogen gas
(D) Both (A) & (C)

Q3 In amalgam of mercury with sodium, solvent is
(A) Mercury   (B) Sodium
(C) Amalgam   (D) None of these

Q4 The unit of molality is
(A) $molL^{-1}$
(B) $molkg^{-1}$
(C) $mol^{-1}L^{-1}$
(D) $molL$

Q5 The partial pressure of the gas in vapour phase is proportional to the mole fraction of the gas in the solution is given by
(A) Raoult's law
(B) Ostwald's law
(C) Distribution law
(D) Henry's law

Q6 Four gases like H_2, He, CH_4 and CO_2 has Henry's constant values (K_H) are $69.16, 144.979, 0.413$ and 1.67. The gas which is more soluble in liquid is
(A) He
(B) CH_4
(C) H_2

(D) CO_2

Q7 The solubility of gas in a liquid increase with
(A) Increase of temperature
(B) Amount of liquid taken
(C) Decreases in temperature
(D) Reduction of gas pressure

Q8 Solubility of a substance is its maximum amount that can be dissolved in a specified amount of solvent. It depends upon
(i) nature of solute
(ii) nature of solvent
(iii) temperature
(iv) pressure
(A) Only (i), (ii) and (iii)
(B) Only (i), (iii) and (iv)
(C) Only (i) and (iv)
(D) (i), (ii), (iii) and (iv)

Q9 During dissolution when solute is a added to the solvent, some solute particles separate out from the solution as a result of crystallization. At the stage of equilibrium, the concentration of solute in the solution at given temperature and pressure.
(A) increases
(B) decreases
(C) remains constant
(D) keeps changing

Q10 Consider the two figures given below.
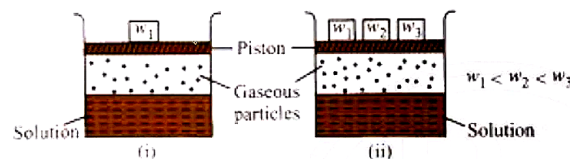
Which of the following statements regarding the experiment is true?
(A)

The solubility of a gas in liquid in beaker (i) is greater than that in beaker (ii).

(B) The solubility of gas in beaker (i) is less than that in beaker (ii)

(C) The solubility of gas is equal in both beakers.

(D) The solubility of gas remains unaffected by change in weights.

Q11 According to Henry's law the partial pressure of the gas in vapour phase (p) is proportional to the mole fraction of the gas (x) in the solution. For different gases the correct statements about Henry's constant is

(A) Higher the value of K_H at a given pressure, higher is the solubility of the gas.

(B) Higher in the value of K_H at a given pressure, lower the solubility of the gas

(C) K_H is not a function of nature of gas

(D) K_H value for all gases is same at a given pressure.

Q12 The value of Henry's law constant for some gases at $293 \mathrm{~K}$ is given below. Arrange the gases in the increasing order of their solubility.

$\mathrm{He} \;: 144.97 \mathrm{~kbar}, \mathrm{H}_2 : 69.16 \mathrm{~kbar},$
$\mathrm{N}_2 : 76.48 \mathrm{~kbar}, \; \mathrm{O}_2 : 34.86 \mathrm{~kbar}$

(A) $\mathrm{He} < \mathrm{N}_2 < \mathrm{H}_2 < \mathrm{O}_2$

(B) $\mathrm{O}_2 < \mathrm{H}_2 < \mathrm{N}_2 < \mathrm{He}$

(C) $\mathrm{H}_2 < \mathrm{N}_2 < \mathrm{O}_2 < \mathrm{He}$

(D) $\mathrm{He} < \mathrm{O}_2 < \mathrm{N}_2 < \mathrm{H}_2$

Q13 $\mathrm{H}_2\mathrm{S}$ is a toxic gas used in qualitative analysis. If solubility of $\mathrm{H}_2\mathrm{S}$ in water at STP is $0.195 \mathrm{~m}$, what is the value of K_H?

(A) $0.0263 \mathrm{~bar}$

(B) $69.16 \mathrm{~bar}$

(C) $192 \mathrm{~bar}$

(D) $282 \mathrm{~bar}$

Q14 Henry's law constant for molality of methane in benzene at $298 \mathrm{~K}$ is $4.27 \times 10^5 \mathrm{~mm~Hg}$. The mole fraction of methane in benzene at $298 \mathrm{~K}$ under $760 \mathrm{~mm~Hg}$ is

(A) 1.78×10^{-3}

(B) 17.43

(C) 0.114

(D) 2.814

Q15 When a gas is bubbled through water at $298 \mathrm{~K}$, a very dilute solution of gas is obtained. Henry's law constant for the gas is $100 \mathrm{~k~bar}$. If gas exerts a pressure of 1 bar, the number of moles of gas dissolved in 1 litre of water is

(A) 0.555

(B) 55.55×10^{-5}

(C) 55.55×10^{-3}

(D) 5.55×10^{-5}

Q16 How much oxygen is dissolved in $100 \mathrm{~mL}$ water at $298 \mathrm{~K}$ if partial pressure of oxygen is 0.5 atm and $K_H = 1.4 \times 10^{-3} \mathrm{~mol/L/atm}$?

(A) $22.4\mathrm{mg}$

(B) $22.4 \mathrm{~g}$

(C) $2.24 \mathrm{~g}$

(D) $2.24\mathrm{mg}$

Q17 Henry's law is not applicable for aqueous solution of

(A) O_2

(B) N_2

(C) SO_3

(D) He

Q18 On increasing temperature, the solubility of NaNO_3 in water

(A) Increases

(B) Decreases

(C) Remains unaffected

(D) Cannot be determined

Q19 O_2 is bubbled through water at $293 \mathrm{~K}$. Assume that O_2 exerts a partial pressure of 0.98 bar, find the solubility of O_2 in $\mathrm{g~L}^{-1}$. The value of Henry's Law constant K_H for O_2 is $34.84 \mathrm{~k}$ bar.

(A) 0.05 (B) 0.08

(C) 0.07 (D) 0.01

Answer Key

Q1	(D)		Q11	(B)
Q2	(D)		Q12	(A)
Q3	(B)		Q13	(D)
Q4	(B)		Q14	(A)
Q5	(D)		Q15	(B)
Q6	(B)		Q16	(D)
Q7	(C)		Q17	(C)
Q8	(D)		Q18	(A)
Q9	(C)		Q19	(A)
Q10	(B)			

Android App | **iOS App** | **PW Website**