

Questions

MathonGo

Q1 - 2024 (05 Apr Shift 2)

Given below are two statements :

Statement I : On passing $\text{HCl}_{(g)}$ through a saturated solution of BaCl_2 , at room temperature white turbidity appears.

Statement II : When HCl gas is passed through a saturated solution of NaCl , sodium chloride is precipitated due to common ion effect.

In the light of the above statements, choose the most appropriate answer from the options given below :

- (1) Both Statement I and Statement II are correct
- (2) Statement I is correct but Statement II is incorrect
- (3) Both Statement I and Statement II are incorrect
- (4) Statement I is incorrect but Statement II is correct

Q2 - 2024 (08 Apr Shift 2)

Given below are two statements :

Statement (I) : A Buffer solution is the mixture of a salt and an acid or a base mixed in any particular quantities.

Statement (II) : Blood is naturally occurring buffer solution whose pH is maintained by $\text{H}_2\text{CO}_3/\text{HCO}_3^-$ concentrations.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Statement I is true but Statement II is false
- (2) Both Statement I and Statement II are true
- (3) Statement I is false but Statement II is true
- (4) Both Statement I and Statement II are false

Q3 - 2024 (09 Apr Shift 2)

For a sparingly soluble salt AB_2 , the equilibrium concentrations of A^{2+} ions and B^- ions are $1.2 \times 10^{-4}\text{M}$ and $0.24 \times 10^{-3}\text{M}$, respectively. The solubility product of AB_2 is :

Questions

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Answer Key

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#MathBoleTohMathonGo

Solutions

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Q1

BaCl_2 , NaCl are soluble but on adding $\text{HCl}(\text{g})$ to BaCl_2 , NaCl solutions, Sodium or Barium chlorides may precipitate out, as a consequence of the law of mass action.

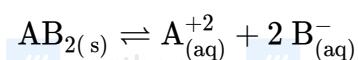
Q2

Buffer solution is a mixture of either weak acid / weak base and its respective conjugate.

Blood is a buffer solution of carbonic acid H_2CO_3 and bicarbonate HCO_3^-

Statement I is false but Statement II is true.

Q3



$$K_{\text{sp}} = [\text{A}^{+2}] [\text{B}^{-}]^2$$

$$= 1.2 \times 10^{-4} \times (2.4 \times 10^{-4})^2$$

$$= 6.91 \times 10^{-12} \text{M}^3$$

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