

Chemical Equilibrium

| 0 | Overtions | Annual Chai |
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| Sr | Questions | Answers Choice |
| 1 | In a reversible chemical reaction having two reactants in equilibrium, if the concentration of the reactants are doubled then the equilibrium constant will | A. Also be doubled B. Be halved C. Becomes one fourth D. Remains the same |
| 2 | Under what condition of temperature and pressure the formation of atomic hydrogen from molecular hydrogen will be favourd | A. High temperature and high pressure B. Low temperature and low pressure C. High temperature and low pressure D. :Low temperature and high pressure |
| 3 | In a lime kiln, to get higher yield of CO_2 , the measure that can be taken is | A. To main high temperature B. To pump out CO ₂ C. To remove Cao D. To add more CaCO ₃ |
| 4 | ph of the buffer CH ₃ COOh + CH ₃ COONa is 3.76. If the mixture contains 1 molar acetic acid and 0.1 molar sodium acetate, then pKa of this buffer is | A. 3.76 B. 4.76 C. 5.76 D. 6.76 |
| 5 | At certain temperature, 50% of HI is dissociated into H ₂ and I ₂ the equilibrium constant is | A. 1.0 B. 3.0 C. 0.5 D. 0.25 |
| 6 | Question Image | A. Reversible reaction B. Irreversible reaction C. Spontaneous reaction D. None of these |
| | | A. Forward |
| 7 | Question Image | B. Backward C. Already in equilibrium D. K _c is never less |
| 8 | The pH of 10 ⁻³ mole dm ⁻³ of an aqueous solution of H ₂ SO ₄ is | A. 3.0 B. 2.7 C. 2.0 D. 1.5 |
| 9 | strength of an acid can be determined by | A. P ^{ka} B. P ^{kp} C. P ^{oH} D. P ^{kw} |
| 10 | Two moles of HI was heated in a sealed tube at 440°C till the equilibrium was reached. HI was found to be 22% decomposed. The equilibrium constant for dissociation is | A. 0.282 B. 0.0796 C. 0.0199 D. 1.99 |
| 11 | A gas bulb is filled with NO2gas and immersed in an ice bath at 0°C which becomes colourless after sometimes. This colourless gas will be | A. NO ₂ B. N ₂ O C. N ₂ O Sub>4D. N ₂ O ₅ |
| 12 | Question Image | |
| 13 | Which of the following factors will favour the reverse reaction in a chemical equilibrium? | A. Increase in concentration of one of the reactants B. Increase in concentration of one of the products C. Removal of one of the products regularly D. None of these |
| | | A. 3.0 <o:p></o:p> B. 2.7 <o:p></o:p> C. |

| 14 | The ph of 10-3 mole dm-3 of an aqueous solution of $\rm H_2SO_4$ is : | latin;mso-fareast-font-family: Calibri;mso-fareast-theme-font:minor-latin;mso-hansi-theme-font:minor-latin;mso-bidi-font-family:Arial;mso-bidi-theme-font:minor-bidi;mso-ansi-language: EN-US;mso-fareast-language:EN-US;mso-bidi-language:AR-SA">2.0 D. 1.5 <o:p></o:p> |
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| 15 | The state of equilibrium refers to | A. State of rest B. Dynamic state C. Stationary state D. State of inertness |
| 16 | pH of 1 molar NaOH is | A. 7 B. zero C. 14 D. 10 |
| 17 | Hydrogen gas and iodine vapours combine to form HI at 425°C, the same composition of mixture is present if we start with decomposition of HI. It suggests | A. A static equilibrium B. Law of mass action C. A dynamic equlibrium D. Irreversible reaction |
| 18 | When H ₂ and I ₂ are mixed and equilibrium is attained, then | A. Amount of HI formed is equal to the amount of H ₂ dissociated B. HI dissociation stops C. The reaction stops completely D. None of these |
| 19 | Question Image | |
| 20 | $K_{\rm b}$ value of NH4OH is 1.81 x 10 ⁻⁵ and its conjugate acid has $K_{\rm a}$ = 5.7 x 10 ⁻¹⁰ pKb of the base is 4.74, pKa of its conjugate acid is | A4.74 B. 4.74 C. 10 D. 9.26 |