

Worksheet: Equilibrium

IB · Class 11 · Chemistry · 5 questions · 16 marks

Name: _____

Date: _____

Score: _____ / 16

Q1. Find the pH of a 0.1 M CH_3COOH solution ($K_a = 1.8 \times 10^{-5}$). *[3 marks]*

Q2. Find the pH of a buffer of 0.1 M CH_3COOH and 0.2 M CH_3COONa ($\text{p}K_a = 4.74$). *[3 marks]*

Q3. Predict the effect of increasing temperature on $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$ ($\Delta H = -92.4 \text{ kJ}$). *[2 marks]*

Q4. For $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$, $K_c = 54.8$ at 425 C. If 0.5 M H_2 and 0.5 M I_2 are mixed, find $[\text{HI}]$ at equilibrium. *[5 marks]*

Q5. K_{sp} of BaSO_4 is 1.5×10^{-9} . Will a precipitate form when 0.01 M BaCl_2 and 0.01 M Na_2SO_4 are mixed? *[3 marks]*
