Sistla 23 H-H equation Chemistry 2 Name: 05/02/2025

1. [HCO3-]=24mM

pCO2=40 mmHg 0.03 is the solubility coefficient of CO₂ in plasma (mM/mmHg) **pH = 6.1 + log [24 / (0.03 × 40)]** pH=Normal blood pH

2. If pCO_2 rises to 60 mmHg (e.g., during respiratory acidosis), what happens to blood pH if $[HCO_3^-]$ remains at 24 mM?

3. What concentration of HCO_3^- is required to maintain a pH of 7.4 if pCO_2 increases to 50 mmHg?

4. If blood pH is measured at 7.2 and pCO_2 is 40 mmHg, what is the corresponding bicarbonate concentration?