2002 HIGHER SCHOOL CERTIFICATE EXAMINATION Chemistry Centre Number **Section I – Part B (continued)** Student Number Marks **Question 22** (5 marks) Solutions of hydrochloric acid, acetic acid and sulfuric acid were prepared. Each of the solutions had the same concentration (0.01 mol L^{-1}). The pH of the acetic acid solution was 3.4. $0.01 \text{ mol } L^{-1}$ $0.01 \text{ mol } L^{-1}$ $0.01 \text{ mol } L^{-1}$ sulfuric acid hydrochloric acetic acid acid pH = 3.4Calculate the pH of the hydrochloric acid solution. 1 (a) (b) Compare the pH of the sulfuric acid solution to the pH of the hydrochloric acid 2 solution. Justify your answer. (No calculations are necessary.) Explain why the acetic acid solution has a higher pH than the hydrochloric acid 2 solution.

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