

CHEMISTRY 204
Hour Exam II
Practice Exam Spring 2024
Dr. D. DeCoste

Name _____

Signature _____

T.A. _____

Section _____

This exam contains 23 questions on 14 numbered pages. Check now to make sure you have a complete exam. You have two hours to complete the exam. Determine the **best** answer to the first 20 questions and enter these on the special answer sheet. Also, circle your responses in this exam booklet. **Show all of your work and provide complete answers to questions 21, 22 and 23.**

1-20	(60 pts.)	_____
21	(25 pts.)	_____
22	(20 pts)	_____
23	(15 pts.)	_____
Total	(120 pts)	_____

Useful Information:

- Unless otherwise noted, all solutions referred to on this exam are aqueous solutions at 25°C.
- On this exam, H_3O^+ and H^+ are used interchangeably.

$$K_w = [\text{H}^+][\text{OH}^-] = 1.0 \times 10^{-14} \text{ at } 25^\circ\text{C}.$$

$$\text{For } ax^2 + bx + c = 0, x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\text{pH} = -\log[\text{H}_3\text{O}^+] = -\log[\text{H}^+]$$

$$K_a = \frac{[\text{H}^+]^2 - K_w}{[\text{HA}]_0 - \frac{[\text{H}^+]^2 - K_w}{[\text{H}^+]}}$$