**Chemistry 20 – Lesson 26**

**pH and pOH**

**/76**

1.

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2.

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3.

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4.

/5  

5.

/6  

6.

(a)

/9

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Food** | **[H+(aq)]**  **(mol/L)** | **[OH–(aq)]**  **(mol/L)** | **pH** | **pOH** |
| oranges | 5.5 × 10-3 | **1.8 × 10-12** | **2.26** | **11.74** |
| asparagus | **4 × 10-9** | **3 × 10-6** | **8.4** | 5.6 |
| olives | **5.0 × 10-4** | 2.0 × 10-11 | **3.30** | **10.70** |
| blackberries | **4.0 × 10-4** | **2.5 × 10-11** | **3.40** | 10.60 |

(b) **Oranges** would taste most sour.

7.

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Note that negative values for pH and pOH are possible. Further, a negative pH or pOH indicates a very concentrated acidic or basic solution.

8.

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9.

(a) neutral? **[H+] = [OH−]**

/3 (b) acidic? **[H+] > [OH−]**

(c) basic? **[H+] < [OH−]**

10.

/6  

11.

/3 

12.

/2 If the pH decreases by 1, the concentration has increased by a factor of 10. Therefore, a change of 3 pH units is equivalent to a 1000 fold change in concentration.

13.

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14.

/6  

15.

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