Acid Unit: Indicators

1. A mass of 1.80 g of CH3COOH(aq) is dissolved in enough water to make 300 mL of solution. If the indicator \_\_\_\_\_ is dropped into this solution then the solution will turn \_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| a | HOr | Orange |
| b | HBb | Blue |
| c | HMv | yellow |
| d | HMo | red |

1. An indicator extracted from beetroot reacts with water according to the following equation:

**HR(aq) + H2O(l)🡨 🡪 H3O+(aq) + R-(aq)**

In acidic solution this indicator is red, and in basic solutions it is yellow. The chemical species that is yellow in colour is \_\_\_\_\_ and it is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| a | R-(aq) | Conjugate base |
| b | R-(aq) | Conjugate acid |
| c | HR(aq) | Conjugate base |
| d | HR(aq) | Conjugate acid  |

1. If 47 mL of a monoprotic weak acid solution neutralizes 56 mL of 0.010  Ba(OH)2(aq) and this monoprotic acid solution causes methyl orange to turn red and causes orange IV to turn yellow, then the percent dissociation of this acid is \_\_\_\_\_ %

|  |  |
| --- | --- |
| a | 2.5 |
| b | 4.2 |
| c | 2.1 |
| d | 0.89 |

1. A student tested an acid with pH = 2.4. Some of the observations below are false.

|  |  |
| --- | --- |
| Number | Observation |
| I | Turns HPr red  |
| II | Conducts an electric current |
| III | Feels slippery |
| IV | Turns HBg yellow |
| V | Reacts with Zn(s) to form H2(g)  |

The **correct** observations could be:

|  |  |
| --- | --- |
| a | I, II, III, IV, V |
| b | I, III |
| c | II, IV, V |
| d | I, II, IV, V |

Solutions:

1. D 2. A 3. B 4. C