

Acid Unit: Indicators

1. A mass of 1.80 g of $\text{CH}_3\text{COOH}(\text{aq})$ 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

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



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	$\text{R}^-(\text{aq})$	Conjugate base
b	$\text{R}^-(\text{aq})$	Conjugate acid
c	$\text{HR}(\text{aq})$	Conjugate base
d	$\text{HR}(\text{aq})$	Conjugate acid

3. If 47 mL of a monoprotic weak acid solution neutralizes 56 mL of 0.010 mol/L $\text{Ba}(\text{OH})_2(\text{aq})$ 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

4. A student tested an acid with $\text{pH} = 2.4$. 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 $\text{Zn}(\text{s})$ to form $\text{H}_2(\text{g})$

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