

PSC- 4012 Quiz #4

Name:

Date:

1. Indicate whether each of the following is an acid, base or salt. Explain your answer referring to the substance's dissociation in water.

- a) HNO_3 Acid ; dissociates in water to release H^+
 - b) $\text{Al}(\text{OH})_3$ Base ; dissociates in water to release OH^-
 - c) CaSO_4 Salt ; dissociates but doesn't release H^+ or OH^-
 - d) NaOH Same ans (Base)
 - e) CH_3COOH Acetic acid (exception, H is at end) Same answer
- $\text{CaSO}_4(\text{s}) \xrightarrow{\text{H}_2\text{O}} \text{Ca}^{+2}(\text{aq}) + \text{SO}_4^{-2}(\text{aq})$

2. You obtained the following lab results from tests using litmus paper and an electric conductivity detector:

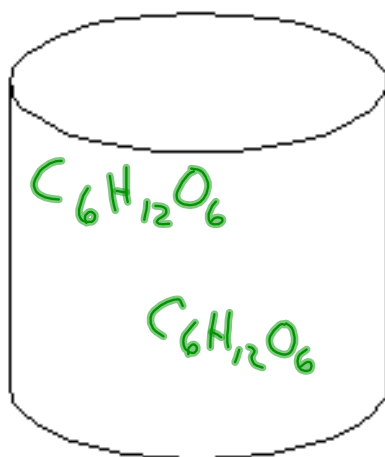
Test	A	B	C	D	E
Conducts current	+++	+++	no	+	+++
Red litmus paper	blue	red	red	red	red
Blue litmus paper	blue	red	blue	red	blue

Which solution/s is/are:

- a) ~~acidic and weak electrolyte~~ D
- b) ~~acidic and strong electrolyte~~ B
- c) ~~basic and strong electrolyte~~ A
- d) ~~possibly salt water~~ E
stay blue → blue
- e) ~~possibly distilled water~~ C
no

3. Fructose is the sugar found in honey, fruits, and berries. Of all sugars, it is the most soluble in water. An aqueous solution of fructose does not conduct electricity.

a) In the tank below, illustrate what happens when fructose ($C_6H_{12}O_6$) dissolves in water.



b) Explain your illustration.

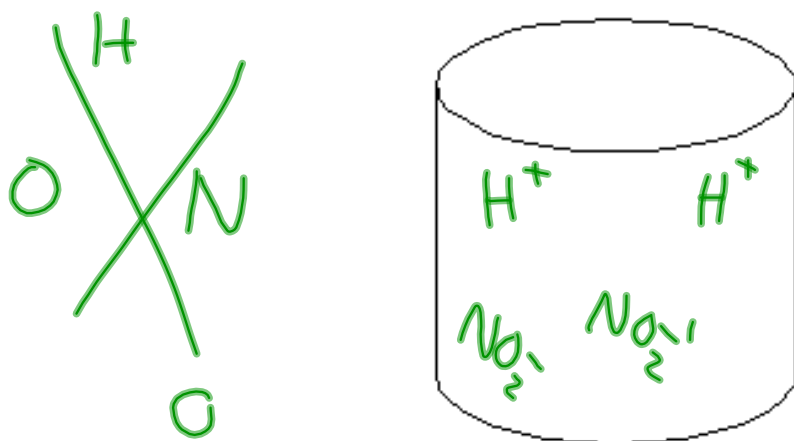
Since it doesn't conduct electricity
the molecules must be intact.

c) Specify the type of dissolution that occurs.

Molecular

4. A nitrous acid solution (HNO_2) is a good conductor of electricity.

a) In the tank below, illustrate what happens when nitrous acid dissolves in water.



b) Explain your illustration.

Since it conducts electricity
the molecules must have broken into ions.

c) Specify the type of dissolution that occurs.

Ionic