

Matter and Molecules

In your textbook, read about atoms, elements, molecules, compounds, ions, and symbols and formulas.

Draw label the parts of the atom. Use these choices:

Positive | neutral | negative | energy level | electron | neutron | proton | nucleus

Determine if the statement is true. If it is not, rewrite the italicized term to make it true.

- NaCl has a(n) *covalent* bond. _____
- H₂O is made up of *molecules*. _____
- HCl has a(n) *ionic* bond. _____
- Na⁺ is a(n) *molecule*. _____
- Salt water is a(n) *compound*. _____
- Water will dissolve *sugar*. _____

In your textbook, read about acids and bases.

Use the pH scale below to help you identify each material and its pH.

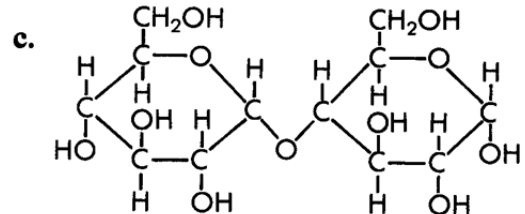
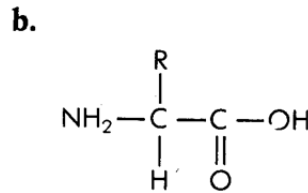
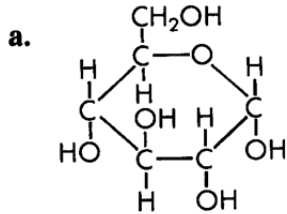
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Tile cleaner					coffee		H ₂ O			Detergent				Lye

- _____ is a strong base with a pH of ____
- _____ is a weak acid with a pH of ____
- _____ is neutral and has a pH of ____
- _____ is a strong acid with a pH of ____
- _____ is a weak base with a pH of ____

Determine if the statement is true. If it is not, rewrite the italicized part to make it true.

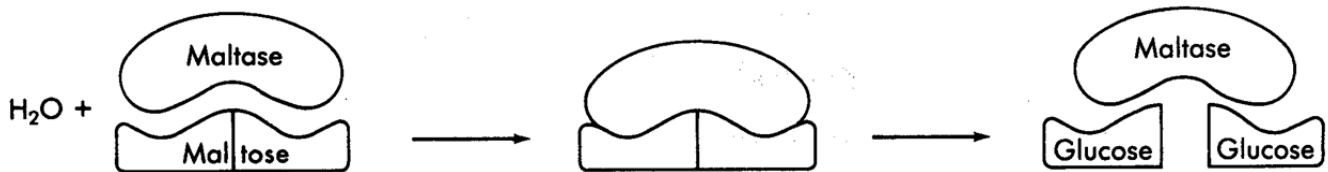
- All organic compounds are compounds that contain oxygen.
- Maltose and sucrose are two examples of monosaccharides.
- Proteins are composed of 20 different amino acids.

Identify the following chemical structures: Amino Acid | Maltose | Glucose



Use the letters of the chemical structures above to answer the statements below.

- _____ When many are bonded together a protein is formed.
- _____ It is a disaccharide with the formula C₁₂H₂₂O₁₁.
- _____ It is an isomer of fructose and galactose.
- _____ There are twenty different types of these.
- _____ This is a monosaccharide, or simple sugar.



- What is the name of the enzyme shown in the model?
- What is the name of the substrate shown?
- Does the reaction represent dehydration synthesis (condensation) or hydrolysis? Explain.
- Explain how enzymes affect activation energy and reaction temperature.