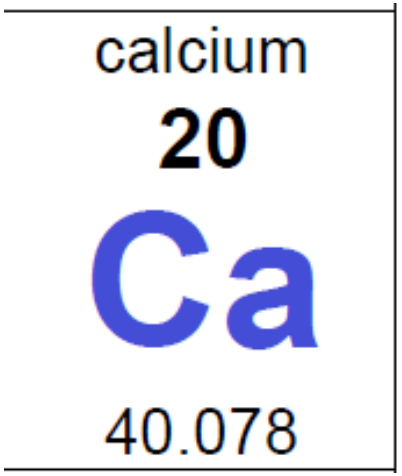
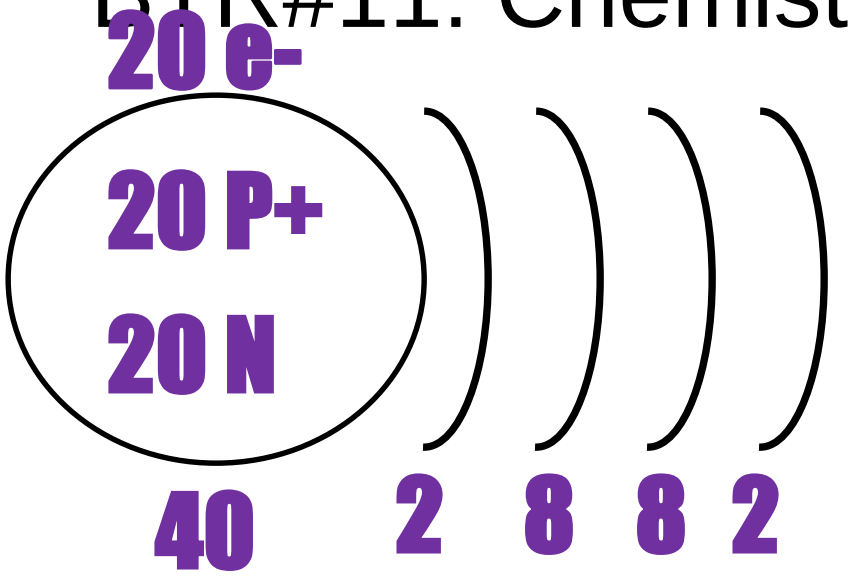
BTR#11: Chemistry Review

Find **Calcium** on the periodic table (Ca).

1. What is the **atomic number** for Ca? **20**
2. What is the **atomic weight**? **40**
3. Number of **protons**? **20**
4. Number of **neutrons**? **20**
5. Number of **electrons**? **20**
6. Draw the <u>two</u> **diagrams** of a Calcium atom (Bohr energy-level model & Dot diagram)



BTR#11: Chemistry Review



Ca

7. Is this atom of Calcium a stable & nonreactive atom or a reactive atom likely to form chemical bonds …Explain WHY? reactive

8. If this Calcium atom lost two electrons, would it become a positive or negative **ion** … Explain WHY?

positive

9. How many electrons are shared by the atoms in this chemical bond (C = O)

A) 1

B) 2

C) 4

D) 8

10. A _____ bond is formed when electrons are shared equally?

A) Ionic

B) Polar Covalent

C) Nonpolar Covalent

D) Hydrogen

11. Typically, a sodium atom is composed of 11 electrons, 11 protons, and 11neutrons. An **isotope** of sodium could:

A) Have more than 11 electrons

B) Have more than 11 neutrons

C) Have more than 11 protons

D) Have more than 11 protons plus neutrons

12. Give an example of cohesion you observed in class?

13. Give an example of adhesion you observed in class?

14. Explain why water will dissolve salt but not vegetable oil?

15. Compare the **4 types of Chemical BONDS**: Match all that apply to each description or diagram

I = Ionic PC = Polar Covalent NC = Nonpolar Covalent H = Hydrogen

a) Holds together atoms to improve their stability (atom to atom)	**I PC NC**
b) Holds together molecules (molecule to colecule)	**H**
c) The STRONGEST type of bond	**PC NC**
d) The WEAKEST type of bond	**H**

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e) Responsible for **surface tension** that keeps small insects afloat	**H**
f) Forms after electrons are **traded** between unstable atoms	**I**
g) Forms after electrons are **shared** between unstable atoms	**PC NC**
h) Causes water drops to "stick" together	**H**

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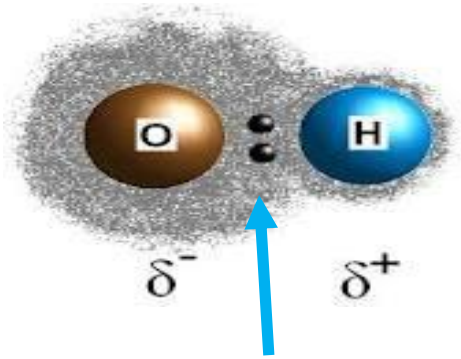
f) 	**PC**
g) **O = O** **H -- H**	**NC**

15. Compare the **4 types of Chemical BONDS**: Match all that apply to each description or diagram

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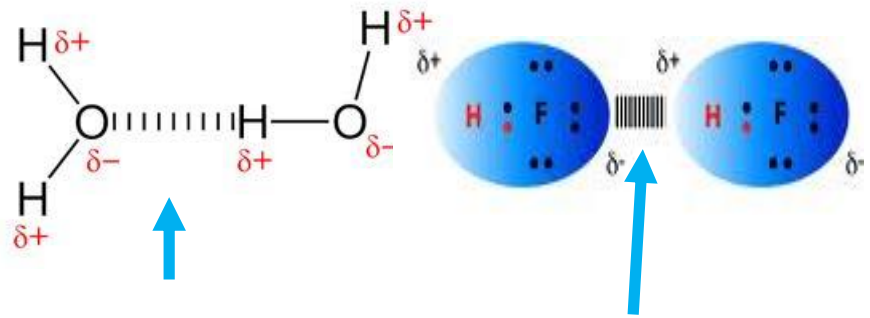
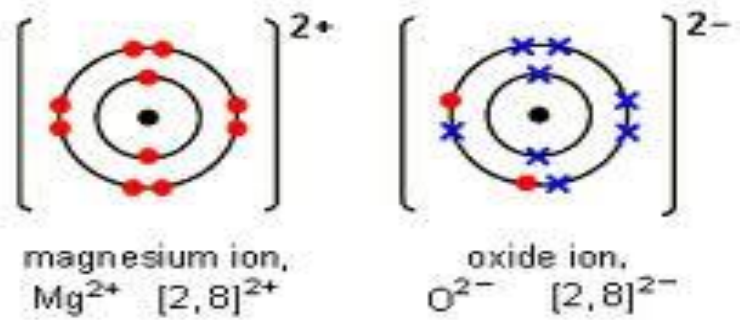
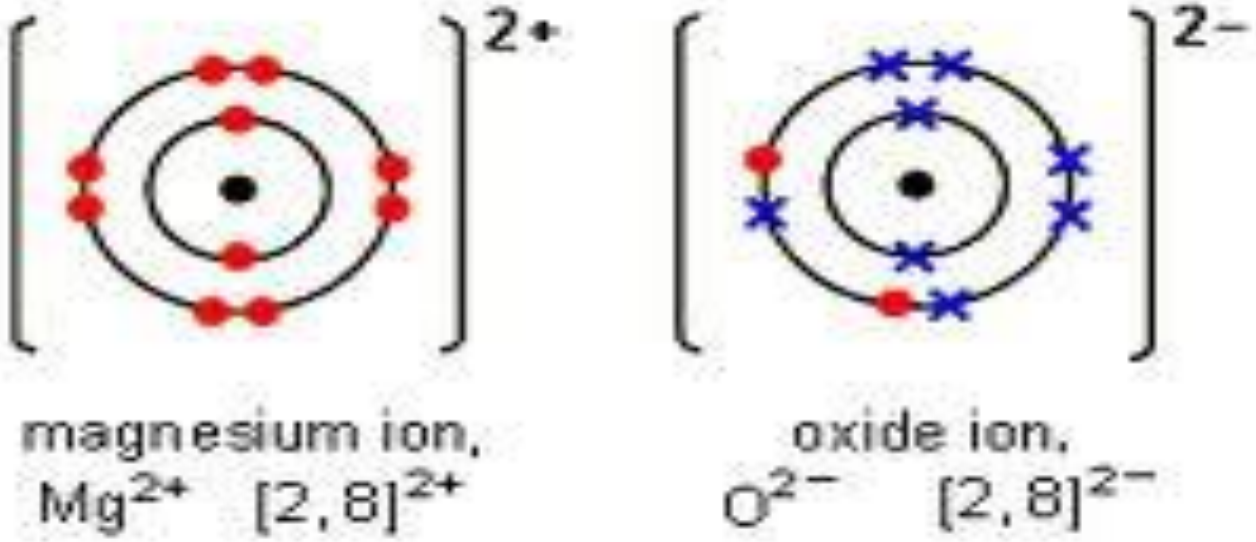
h) 	H
i) 	I

16. How many **protons** does the magnesium atom have in letter i above? **12**



17. Which subatomic particles make up most of the atom's mass ? **Protons and neutrons**

18. Which subatomic particle is involved in the creation of chemical bonds? **electrons**

19. Changing the number of _____ would change an atom into a different element?

a) electrons b) neutrons c) protons d) negative charges

20. Which best describes the density of **LIQUID** H_20 molecules containing a floating ice cube?

a) packed more tightly than the frozen H_20 molecules

b) packed more loosely than the frozen H_20 molecules

c) packed the same as the frozen H_20 molecules

Analogies: Fill in the blank to complete the comparison

21. pH 10 : Base :: pH 3 : **acid**

22. Water : solvent :: lemonade powder : **solute**

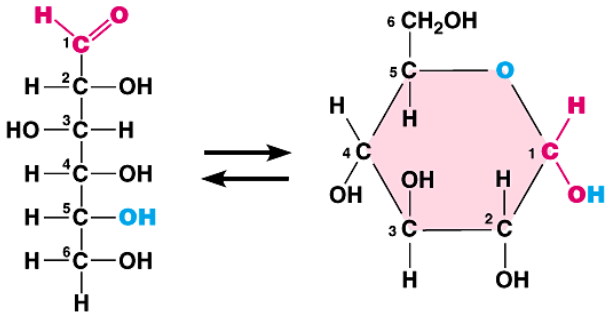
23. electron : negative :: **neutron** : neutral

24. Polar H_20 : **Polar ?** ::

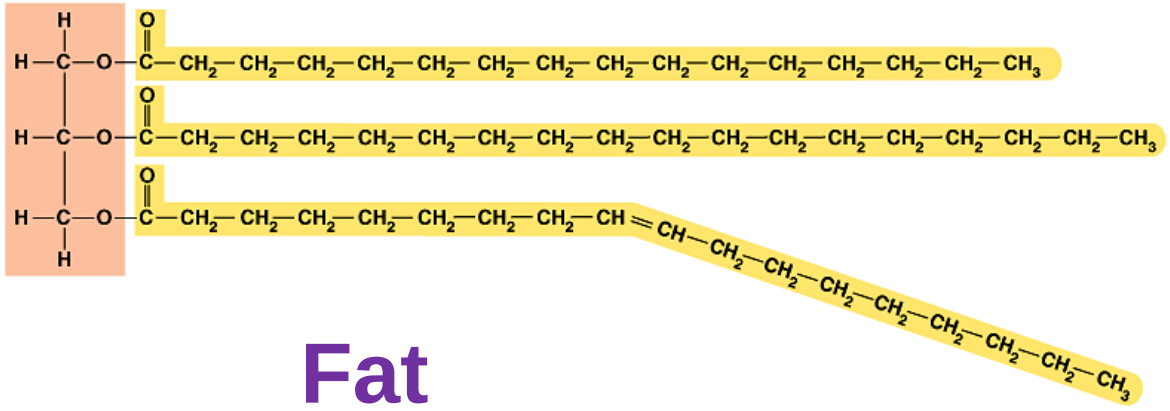
Nonpolar mineral spirits : Nonpolar Oil-based paint

Here are the 4 main types of molecules in your body …. Which **element** is the **most common**?

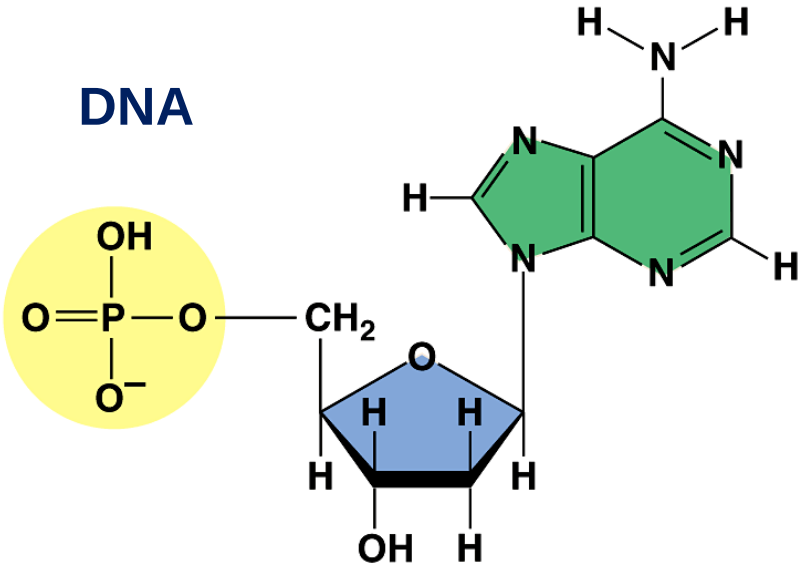
Carbohydrate



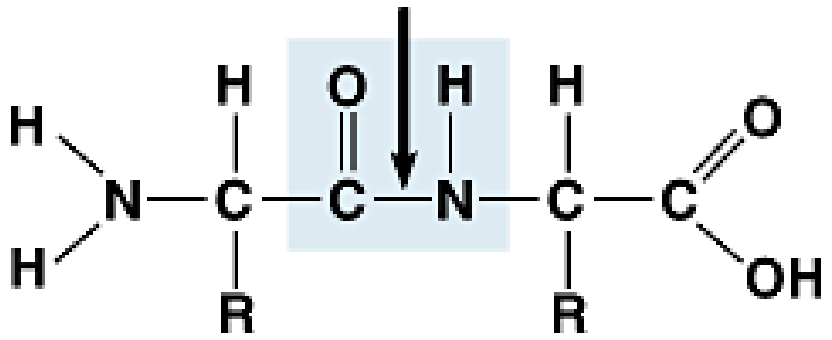
Fat



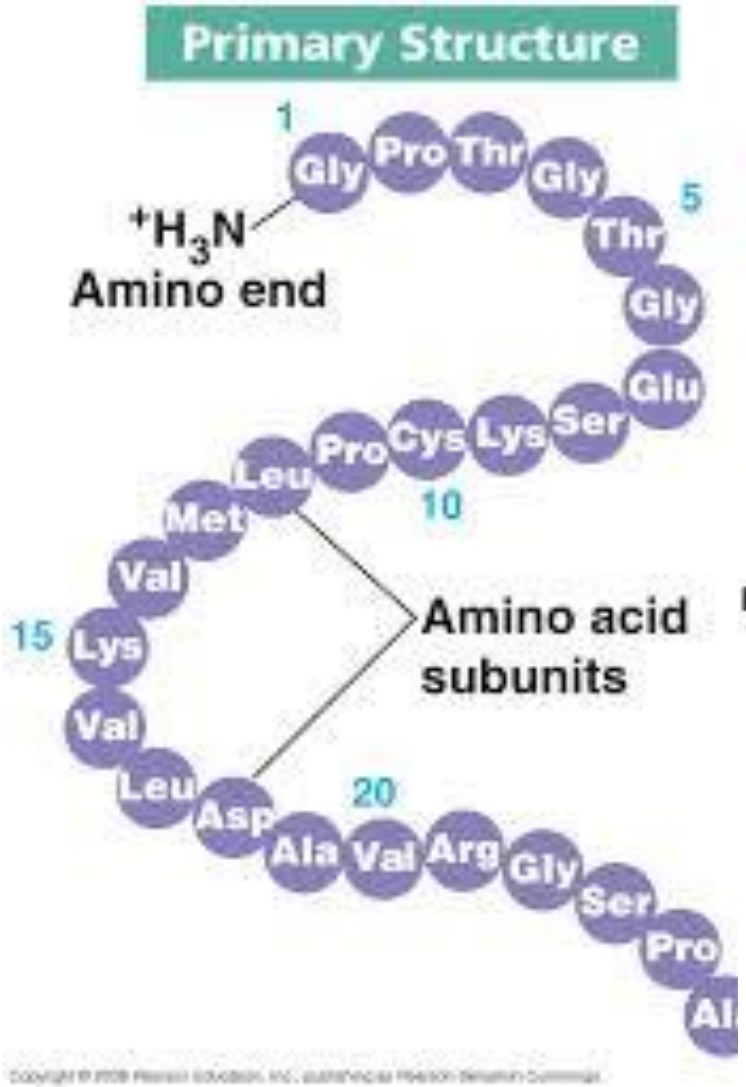
DNA

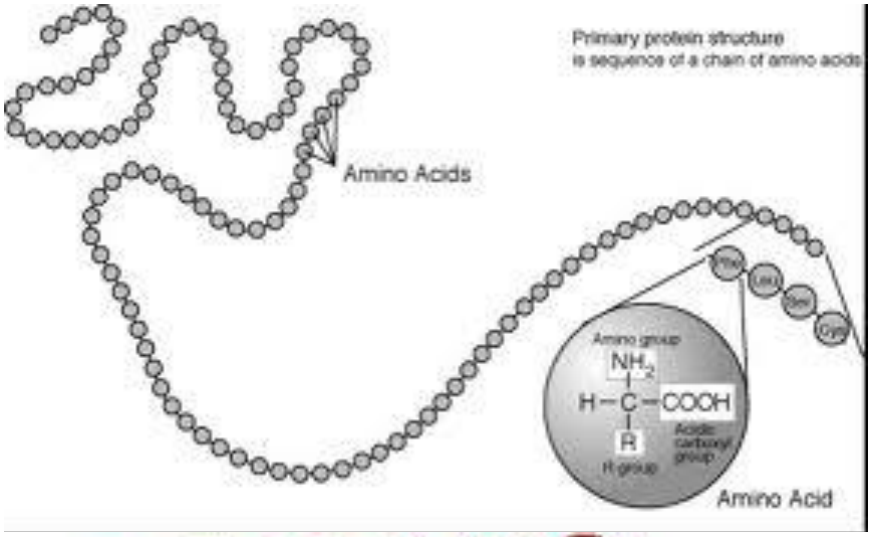


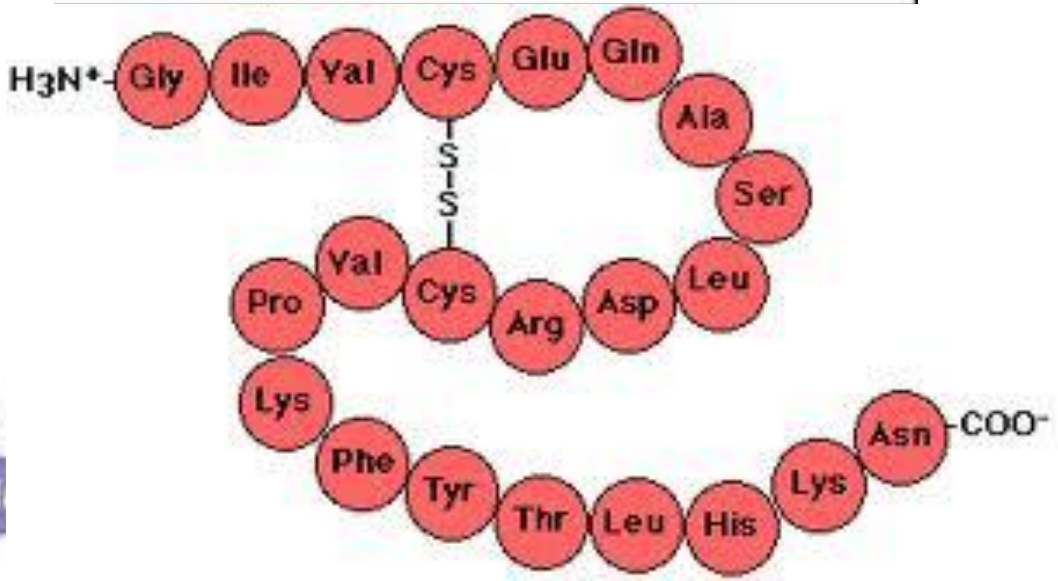
Protein



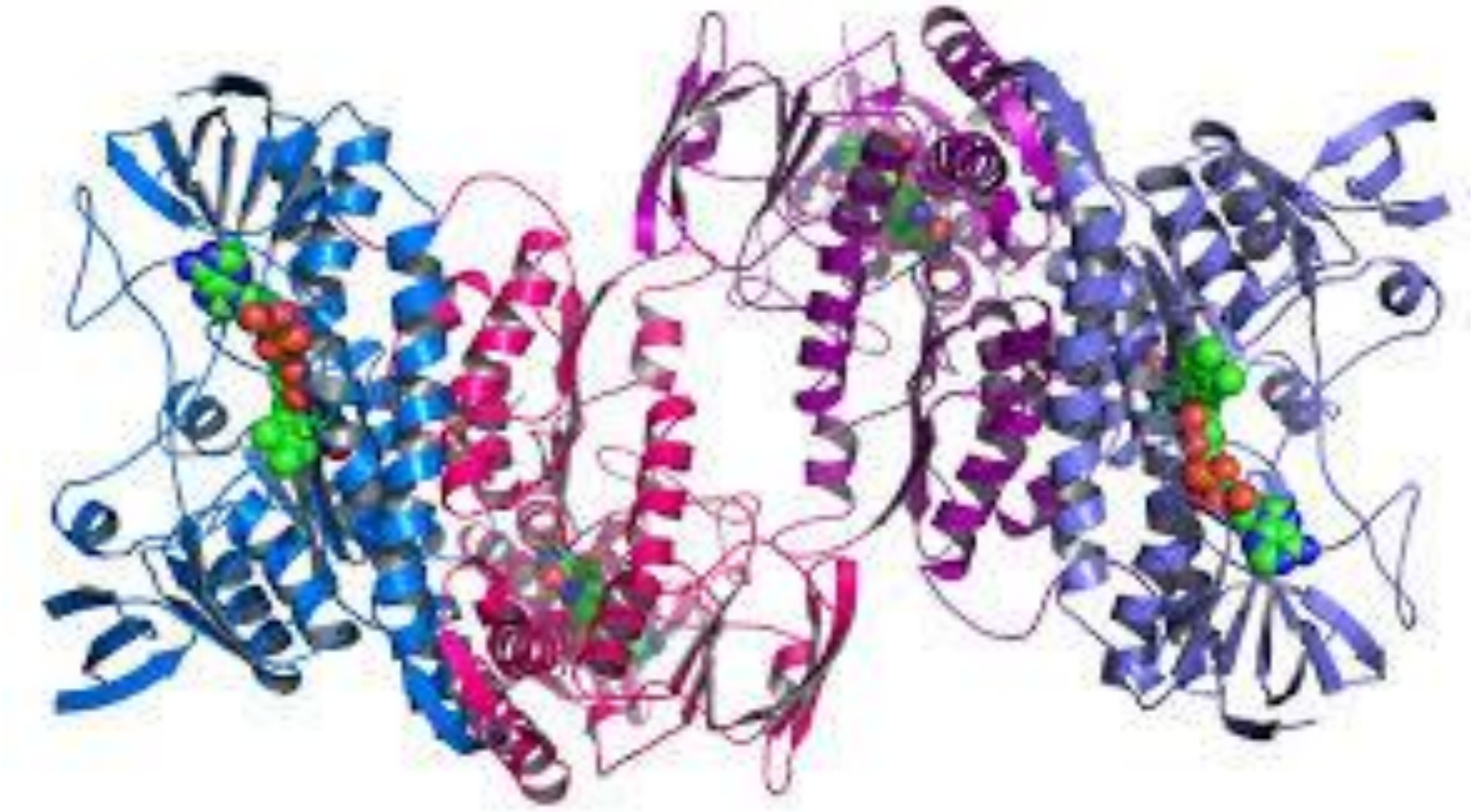
Here are 3 newly formed proteins when they are dry



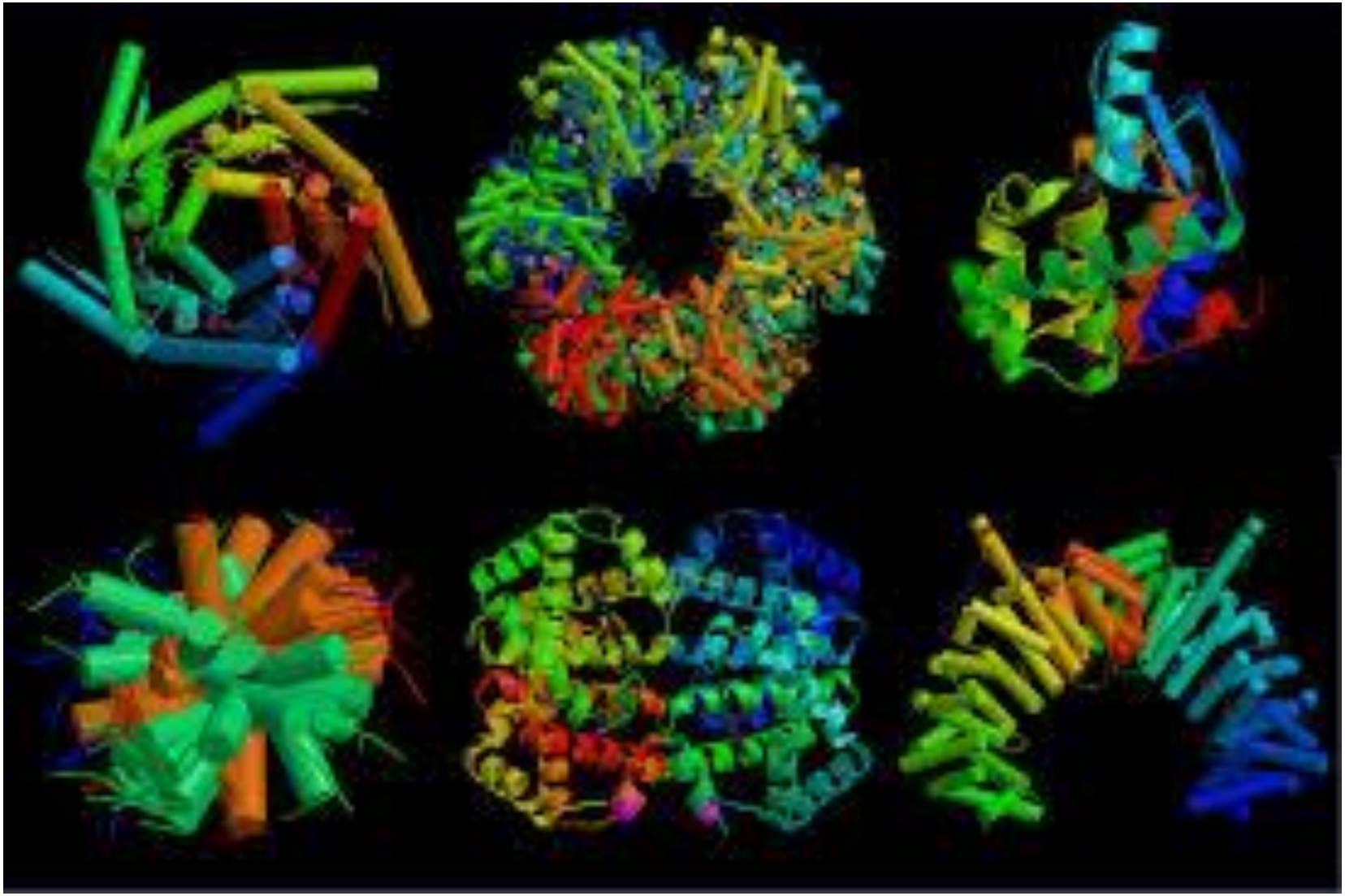


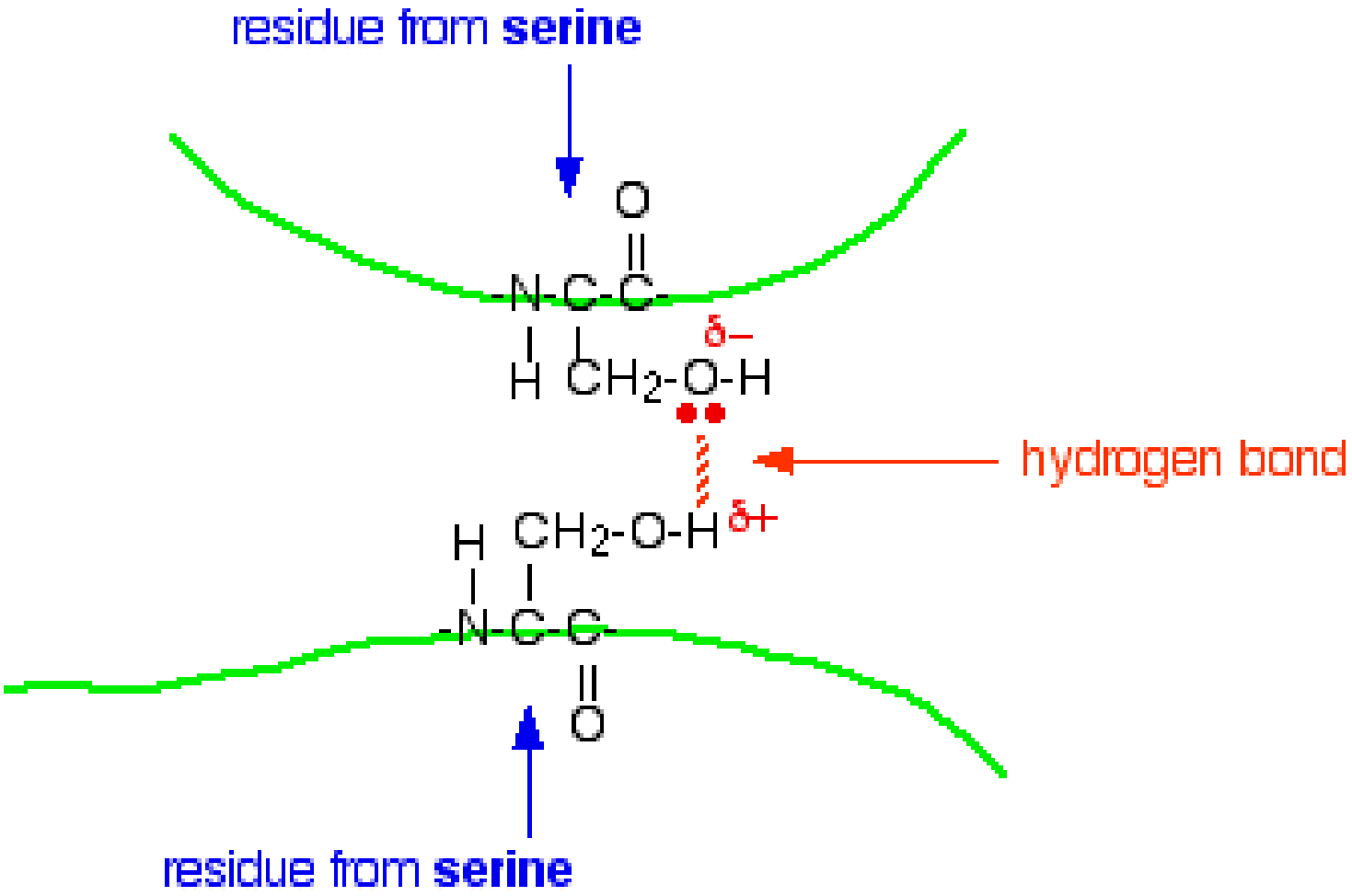


Here is a similar protein when it is placed in a cell that is 70% H_20

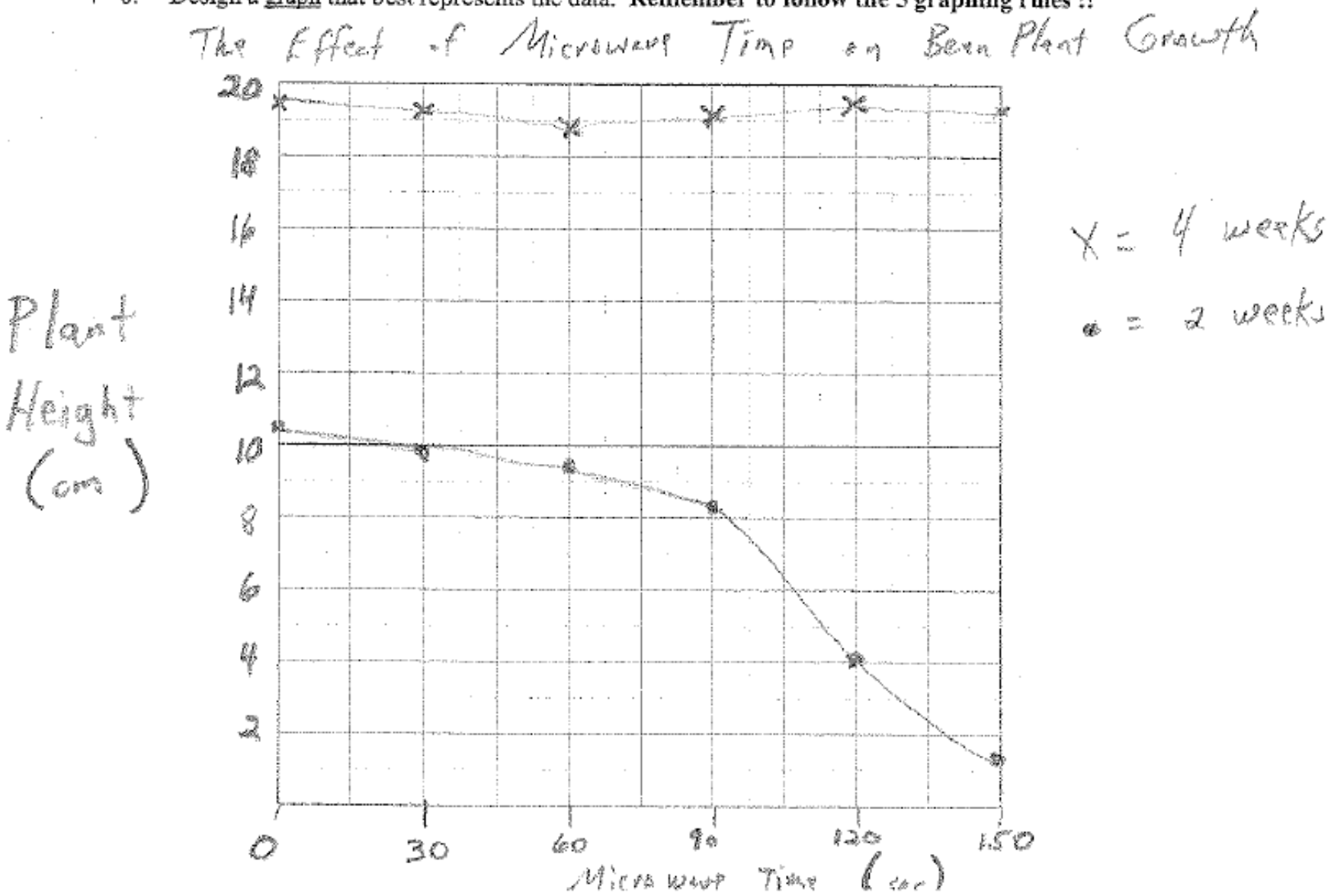


Why does the proteins fold like this?




residue from **serine**
O
N-C-C
H
CH2-O-H
δ−
hydrogen bond
H
CH2-O-H
δ+
N-C-C
O
residue from **serine**

4 - 8. Design a graph that best represents the data. **Remember to follow the 5 graphing rules !!**



Grape Nuts

Nutrition Facts

Serving Size 1/2 cup (58g)
Servings Per Container about 12

Amount Per Serving	Cereal	Cereal with 1/2 cup Skim Milk
Calories	200	240
Calories from Fat	10	10
	% Daily Value* **	
Total Fat 1g*	2%	2%
Saturated Fat 0g	0%	0%
Cholesterol 0mg	0%	0%
Sodium 350mg	15%	17%
Potassium 160mg	5%	10%
Total Carbohydrate 47g	16%	18%
Dietary Fiber 5g	21%	21%
Sugars 7g		
Other Carbohydrate 35g		
Protein 6g		

Quaker Quick Oatmeal

Nutrition Facts

Serving Size 1/2 cup dry (40g)

Servings Per Container about 79

Amount Per Serving	Cereal Alone	with 1/2 cup Vitamin A&D Fortified Skim Milk
Calories	150	190
Calories from Fat	25	25
		% Daily Value**
Total Fat 3g*	5%	5%
Saturated Fat 0.5g	2%	2%
Polyunsaturated Fat 1g		
Moncunsaturated Fat 1g		
Cholesterol 0mg	0%	0%
Sodium 0mg	0%	3%
Total Carbohydrate 27g	9%	11%
Dietary Fiber 4g	15%	15%
Soluble Fiber 2g		
Insoluble Fiber 2g		
Sugars 1g		
Protein 5g		