

10

Physiology 115
Spring 2015

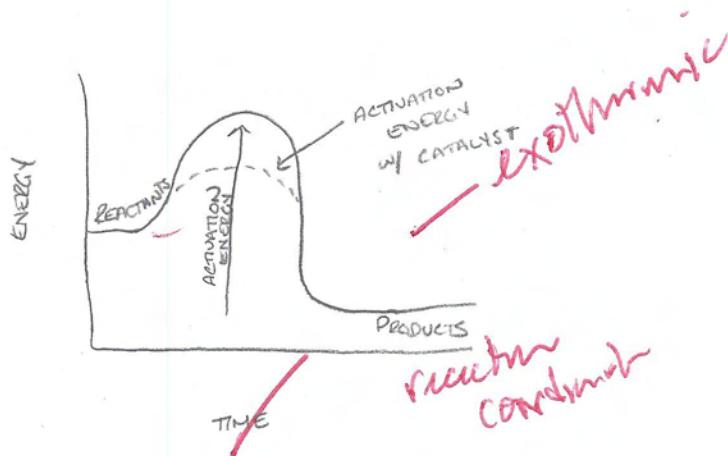
Name LINDSEY SQUIBB

QUIZ #1

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 - a. covalent bonding
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 - (a) Briefly describe any THREE of the FOUR levels of protein structure
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Name MICHAEL CHEUNG

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1. Primary Structure: the amino acid sequence itself
2. Secondary: AAs lining up in to forms: α -helix or β -sheet
3. Tertiary: the folding, coiling, curling of the polypeptide
4. Quaternary: the combining of multiple polypeptides to form a complete protein

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Name David Adam

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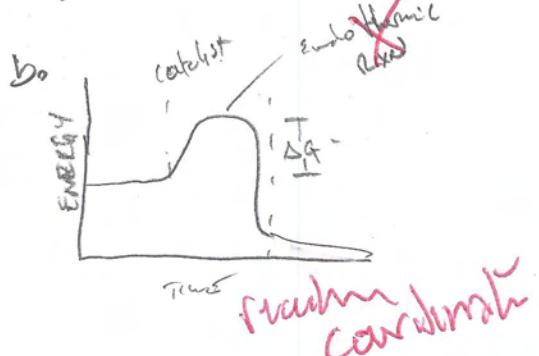
A) Primary: Amino acids. Secondary: Polypeptides.
 Tertiary: Alpha helix and Beta Sheet. Quaternary: folding of the groups.

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a.
~~1° - THIS IS THE PROTEIN AT ITS MOST BASIC. JUST THE AMINO ACID CHAIN.~~
~~2° - THIS IS WHEN H BONDS FORMS ON THE CHAIN CREATING FOLDS IN THE CHAIN~~
~~3° - WHEN MULTIPLE 2° proteins come together & BOND TO ONE ANOTHER~~



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Name Lydia Zyackowski

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Protein

~~1^o~~ - α helix/sheet

2^o - β pleated sheets

3^o - primary + secondary structures to gotten

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Name Jon Warren

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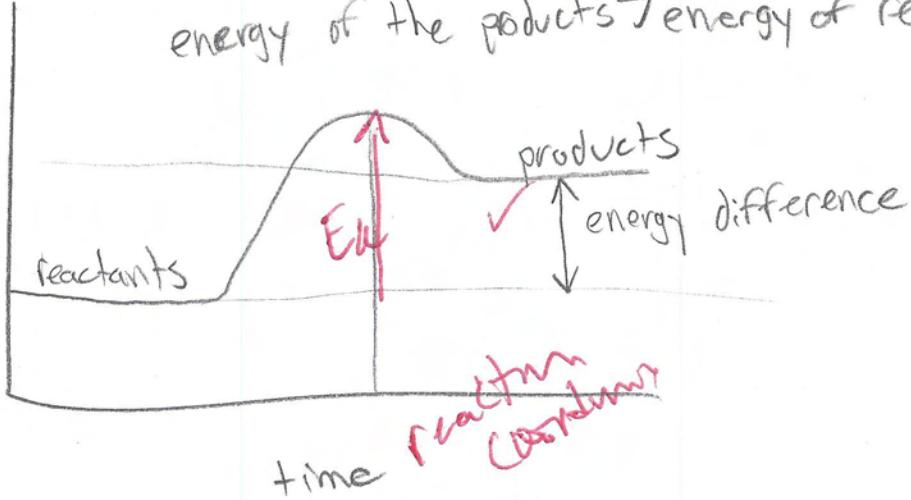
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endothermic: absorbs heat / gains energy
energy of the products > energy of reactants

energy



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Name Tonie Thompson

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✓ Primary structure is the written code of the protein
 Secondary structure is ^{an} alpha ~~helix~~^{helix} or beta sheet
 Tertiary structure is when the protein starts folding
 and has multiple alpha helices or beta sheets

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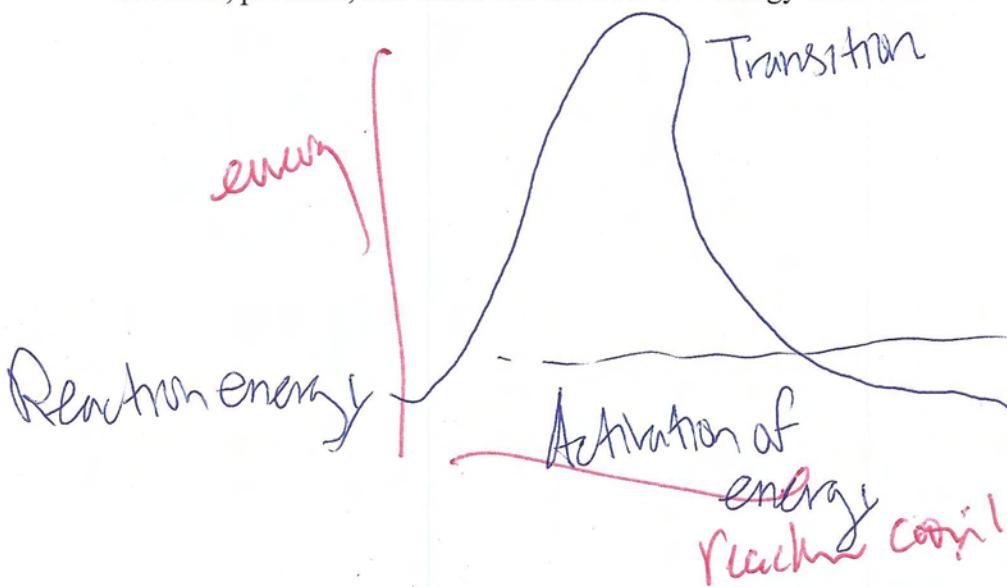
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Name Dawnn Smolish

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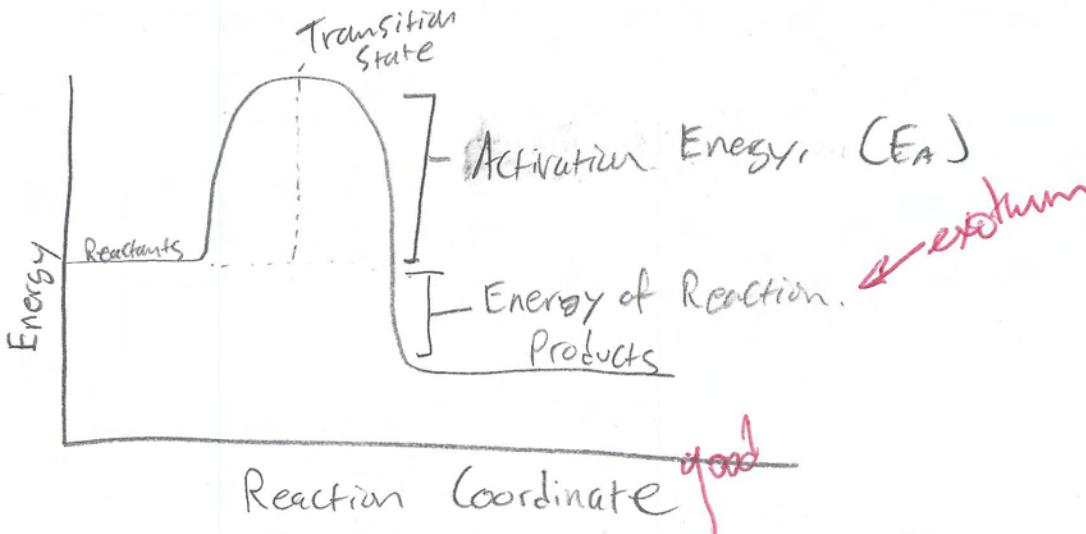
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Name Peter Cheo

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Good!

1° - AA sequence
2° - H-bond backbone
3° Bond interaction
bonds, coils, loops
4° Associate
w/ other
Subunits
↳ nucleic
multi. Subunit
proteins

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secondary protein structure: ^{one} alpha (α) helix or one beta (β) sheet ✓

primary protein structure: order of amino acids ✓

~~quaternary protein structure:~~ combination of beta (β) sheets and alpha (α) helices with an extra folding than tertiary structures

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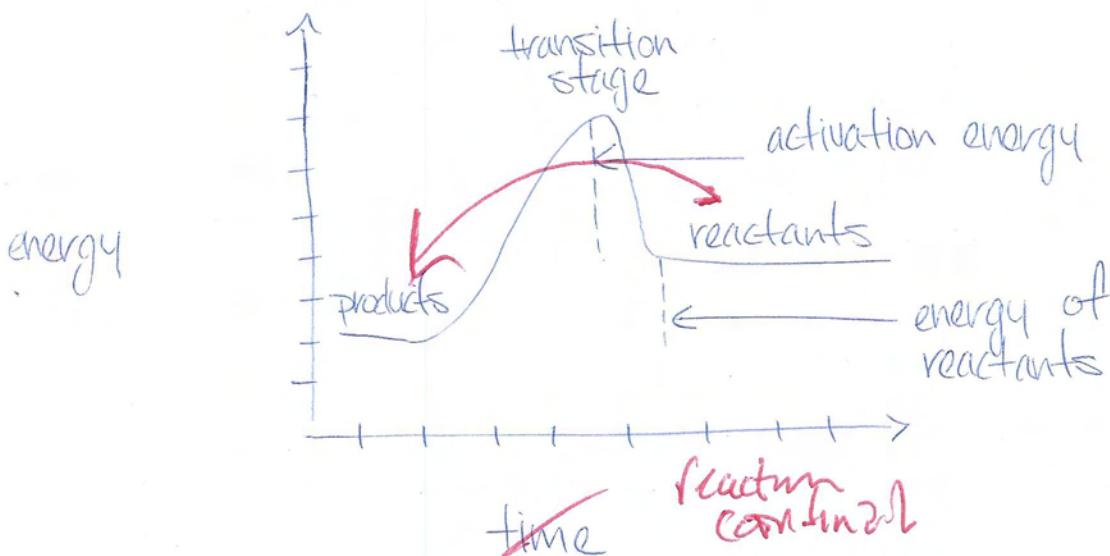
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Name Jagueline Chu

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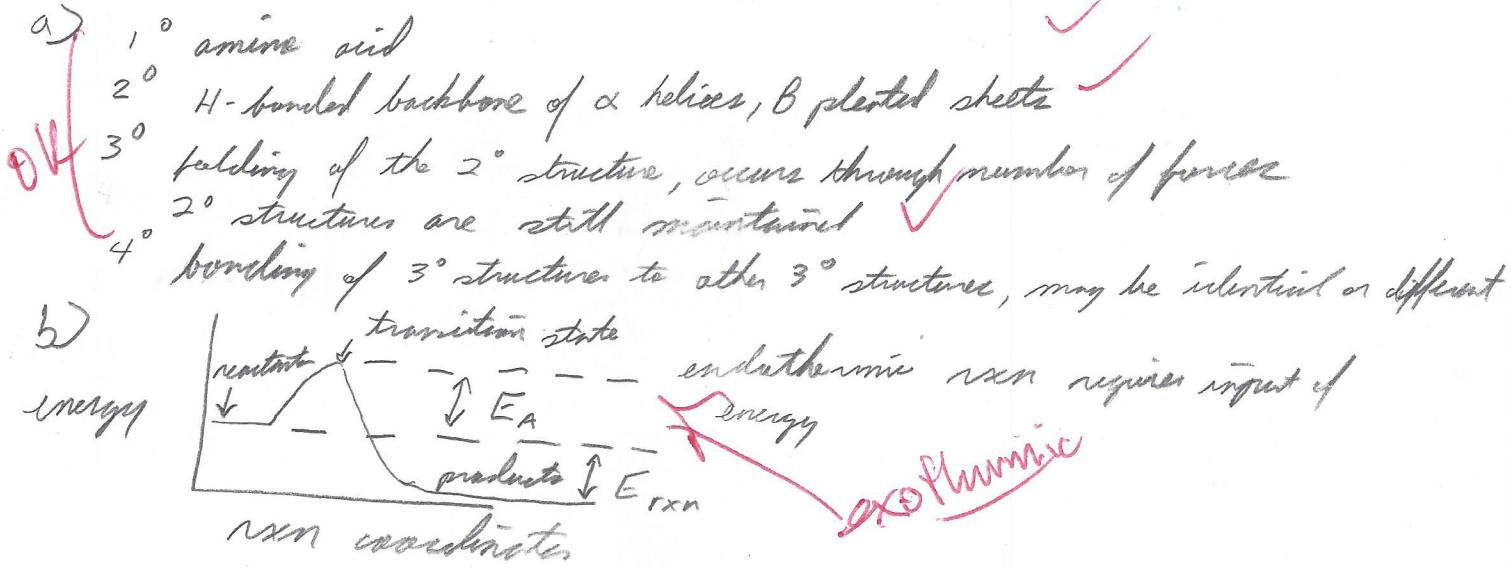


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O is more electronegative giving
 H_2O polar qualities
 H bonding = H⁺ ion shared between 2 more EN atoms
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Name Brandon Velasquez

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1° - amino acids linked together w/ peptide bond

ANSOME
2° - A-helix and B sheet - interactions

3° - ~~fold~~ folding, bending, and coiling of the protein

4° - More than one protein connected together i.e. hemoglobin

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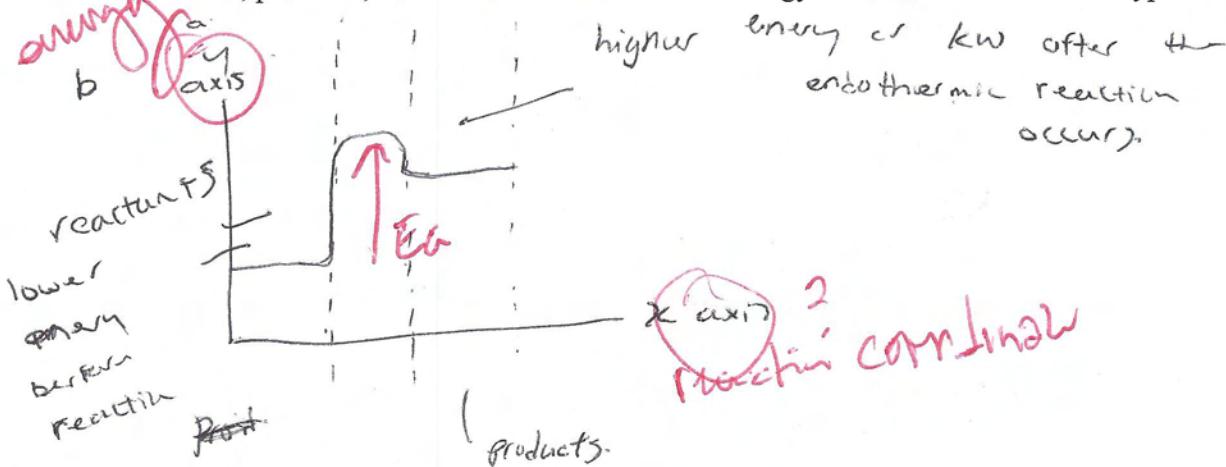
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Name Zac Taylor

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AMINO ACIDS CAN BE SINGULAR, DINITIAL, OR TERTIARY.
THESE ARE DEPENDENT UPON THE FOLDING OF THE PROTEIN

Let's work on this

12

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Name Shahrzad saba

QUIZ #1

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 - (a) Briefly describe any THREE of the FOUR levels of protein structure
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As follows:

a) Proteins have 4 level of structure.

1° = which is the poly peptide chain itself with amino acid sequence.
(primary)

2° = is forming by H-bond of 2 1° structure. it can be α -helix or β sheets. α -helix is the form of helical structure. β -sheets is when chains organized and attached to each other either parallel or anti-parallel to form a sheet structure. \rightarrow rest in the back of the sheet flat

^{3°}, is when δ° structures come together and bind w/
Tertiary all kind of binding (covalent, ionic, hydrogen, etc.) and
form a structure. The δ° structure remain in attack.

Hydrogen bonding is a type of binding where two molecules share a hydrogen atom.

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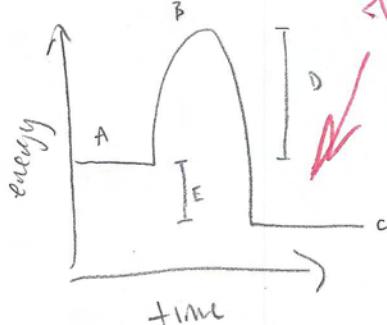
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endo → consumes energy



This is endothermic though

A = reactants
B = transition state
C = products
D = activation energy
E = reaction energy

Matty good

primary : list of ordering of amino acids in protein

secondary : amino acids arranged into α helix + β sheets

tertiary : α helix + β sheets bond together and take up a shape

quaternary : how amino acids with tertiary structure interact with each other

→ checking understanding only!

65

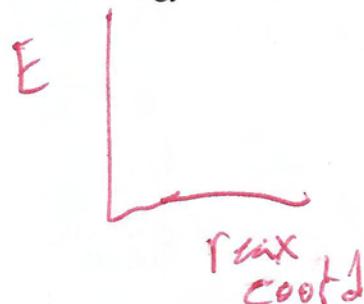
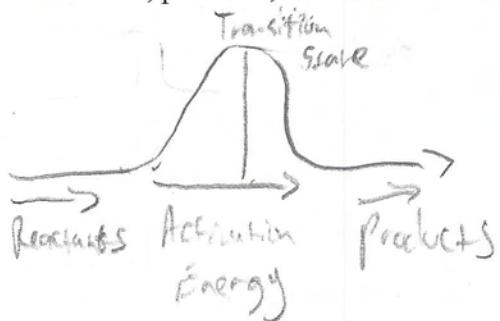
Physiology 115
Spring 2015

Name Alan Crick

QUIZ #1

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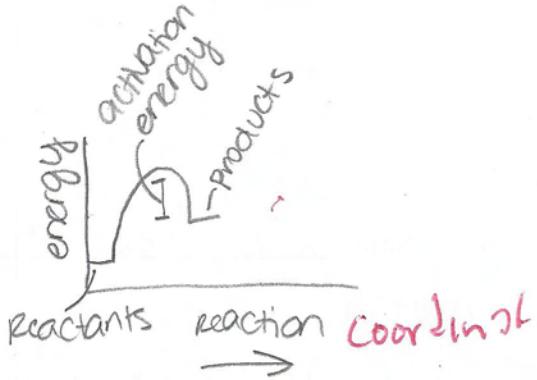
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- Well done*
- a) - Primary structure: the amino acid sequence
- Secondary structure: the beginning of the folding process
two types
- Alpha helix: bonds are created in the backbone + R groups
 - Beta pleated sheets: sheets are formed in an antiparallel fashion
- Tertiary structure: the folding process continues + more bonds are created.
- Quaternary structure: multiple subunits come together
ex: hemoglobin or myoglobin →

b)



endothermic reaction : requires energy for the reaction to occur

exothermic reaction: releases energy from the reaction

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Physiology 115
Spring 2015

Name Chase Dudley

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90%

- 1) Primary structure is the order of amino acids in a polypeptide chain
- 2) Secondary structure is either the alpha helix or beta sheet formation
- 3) Tertiary structure is the folding of the peptide sequence. There may be covalent, hydrophobic, H bonding etc.

Physiology 115
Spring 2015

Name Noah Volt

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Primary (1°) - This is the backbone of the protein ~~the~~ polymer

Secondary (2°) - Composed of beta sheets and alpha helices.

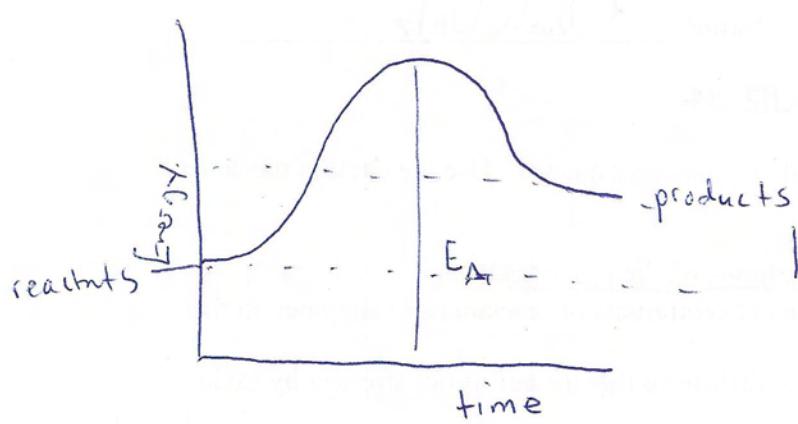
The beta sheets  make a strong structure and the alpha helices  also hold the protein together

Tertiary (3°) this is how the polymer folds and coils on itself

One way it does this is globular

the shape based on bond interactions





| energy required for reaction to take place

reaction coordinate diagram: a graph showing the change in potential energy of the system during a chemical reaction. The vertical axis represents potential energy, and the horizontal axis represents progress along the reaction coordinate.

The reaction coordinate diagram shows the relative energy of the reactants, transition state, and products. The reactants are at a higher energy than the products, indicating a negative overall enthalpy change ($\Delta H < 0$). The transition state is the highest point on the curve, where the potential energy is at its maximum.

The reaction coordinate diagram also shows the activation energy (E_a), which is the energy difference between the reactants and the transition state. This energy is used to break the bonds of the reactants and form the bonds of the products.

The reaction coordinate diagram can be used to predict the rate of a reaction. The rate of a reaction is proportional to the concentration of the reactants and the frequency of collisions between them. The frequency of collisions is determined by the temperature and the size of the molecules.

The reaction coordinate diagram can also be used to determine the equilibrium constant of a reaction. The equilibrium constant is the ratio of the concentrations of the products to the concentrations of the reactants at equilibrium. This ratio is determined by the relative energies of the reactants and products.

The reaction coordinate diagram can be used to determine the effect of a catalyst on a reaction. A catalyst lowers the activation energy of a reaction, making it easier for the reaction to proceed. This is because the catalyst provides an alternative reaction pathway that requires less energy to reach the transition state.

QUIZ #1

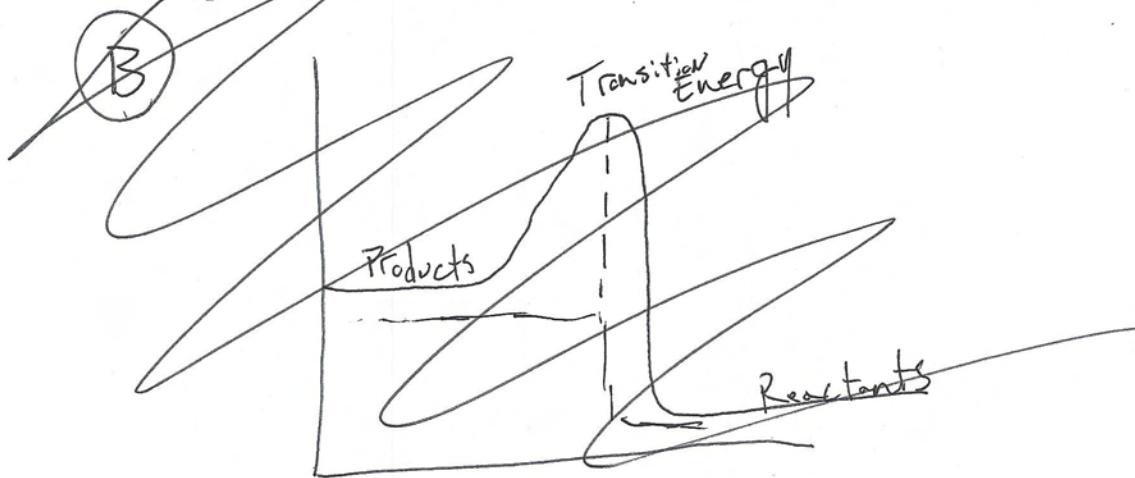
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1. Primary (1°) \rightarrow Amino Acid sequence

2. Secondary (2°) \rightarrow ~~Polymer~~ structures formed through H-Bonds

Alpha (α): helix Formation Created through H-Bonds

Beta (β): two linear sheets formed through H-bonds

- Can Differ due to Direction of N-terminal & C terminus.

3. Tertiary (3°): where the ~~two~~ sheets curl, fold, coil
But the integrity of ~~the~~ β (2°) is intact.

good

10

Physiology 115
Spring 2015

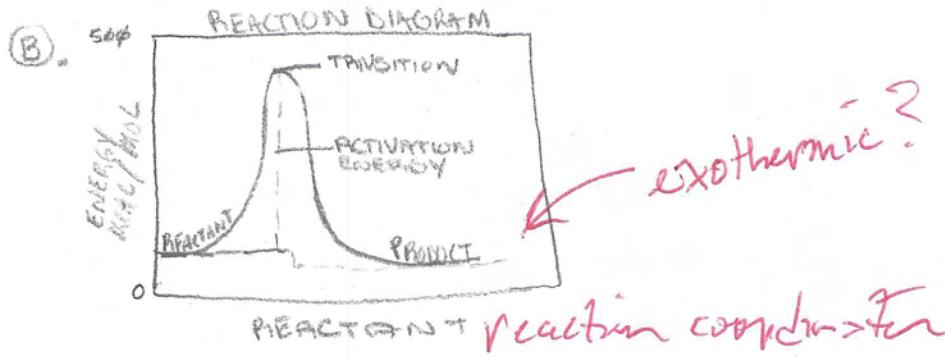
Name BIDLEY, SHENIQUE
20 APR 2015

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~~(A)~~ 1 ALPHA (α) HELIX FORMS A HELIX IN BACKBONE BETA (β) SHEETS : FORMS A LINEAR SHEET
 2 CARBOXYLIC GROUPS : $-COOH$
 3 SIDE (R) = moves from LEFT TO RIGHT



9

Physiology 115
Spring 2015

Name Calvin Nell

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