Draw a quaternary structure of a protein? - Correct Answers -

Overall sequence of shapes formed in a protein? - Correct Answers -

Relate the structure of proteins to their function? - Correct Answers -~ Enzymes - spherical due to tight folding of polypeptide chain. They are soluble and often used in metabolic processes

~ Antibodies - made up of 2 light and 2 heavy polypeptide chains. Have a variable region where the amino acid sequence greatly varies

~ Transport proteins - Channel proteins contain hydrophobic and hydrophilic amino acids causing it to fold up into a channel

~ Structural proteins - are physically strong as consist of long polypeptide chains parallel with each other, with cross-links between them.

Describe the structure of Collagen? - Correct Answers -~ Has 3 polypeptide chains coiled around each other in a triple helix with cross-link which are covalent bonds makes it strong

~ Every 3rd amino acid is glycine

~ Used in supportive tissue

Describe the biurets test? - Correct Answers -~ Solution must be alkaline so add few drops of sodium hydroxide

~ Add some Copper(II) sulphate

~ If the solution turns purple then a protein is present, no proteins it will stay blue

~ Tertiary structure changes - enzyme denatures

Annotate a graph about how Enzyme concentration effects the rate of a enzyme controlled reaction? - Correct Answers -

Explain how Enzyme concentration effects the rate of a enzyme controlled reaction? - Correct Answers -~ The more enzymes there are the more likely it is for a substrate molecule to collide - forming a enzyme substrate-complex

~ If the amount of substrate is limited, there comes a point where all the active sites are full

Explan how Substrate concentration effects the rate of a enzyme controlled reaction? - Correct Answers -~ More substrate is more likely to collide with the active site - more enzyme substrate-complexes form

~ Reaches a 'saturation point' where all the active sites are full so graph levels off

Describe the action of a competitive inhibitor? - Correct Answers -~ Have a similar shape to the substrate

~ They compete with the substrate to bind with the active site

~ They block the active site so no enzyme substrate complexes can form

Describe the action of a non-competitive inhibitor - Correct Answers -~ Molecules that bind away from the active site at the allosteric site

~ Distorts the active shape so substrate is no longer complementary to the active site

Explain sweating? - Correct Answers -~ It means that organisms can cool down without losing to much water as alot of energy is needed to break hydrogen bonds

~ Water molecules carry heat energy away from the surface which cools it down and lower its temperature

Explain why water molecules are cohesive? - Correct Answers -~ Because they are polar

~ Strong Cohesion means water travels in columns up the xylem

Explain surface tension? - Correct Answers -~ Strong cohesion makes high surface tension when water comes into contact with air

~ Why sweat forms droplets and why pond skaters can skate on water

Explain how water can resist changes in temperatures? - Correct Answers -~ Hydrogen bonds give water a high specific heat capacity - So alot of energy is needed to break the hydrogen bonds

~ This means less energy is left to actually heat the water- so alot of energy is needed to change the temperature

Why is a high specific heat capacity useful? - Correct Answers -~ Because for organisms living in the water they don't experience rapid temperature changes

~ Making it a good habitat because they can maintain a stable body temperature

Why is water a good solvent? - Correct Answers -~ Alot of substances are ionic (salts) so atoms are charged