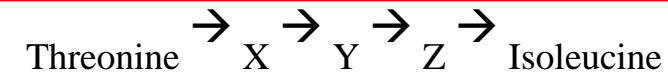


- A metabolic pathway is _____
- An enzyme is _____
- Activation energy is _____
- An enzyme inhibitor is _____
- Competitive inhibitors bind to _____
- Non-competitive inhibitors bind to _____
- End product inhibitions is when the 'end product' of a metabolic pathway inhibits the _____



The diagram illustrates a metabolic pathway controlled by end-product inhibition. Explain what the arrows represent.

_____ and how isoleucine controls the pathway.

Calculate the rate of reaction of the enzyme below. Show your working.

Time / seconds	Volume of oxygen / ml
0	0
60	240
120	480

Re-order the bullet points to explain cell respiration

- Pyruvate is decarboxylated, oxidised and attached to coenzyme A.
- Glucose is converted to pyruvate in glycolysis
- Glucose is phosphorylated to make it less stable
- The link reaction converts pyruvate to acetyl coenzyme A.
- In the Krebs cycle the acetyl group is oxidised and NAD is reduced, forming CO₂
- Electron carriers in the inner membrane transfer electrons and pump protons to the intermembrane space.
- Oxygen binds to free protons (H⁺ ions) forming water
- Energy released from the oxidation reactions is carried to mitochondria inner membranes by NADH (&FADH)
- Glycolysis provides a small gain of ATP & doesn't require oxygen.h

Draw a sketch graph which show how an enzyme controlled reaction rate increase as the substrate concentration increases..

Add lines showing a rate of the same reaction after the addition of a competitive & a non-competitive inhibitor.

Chemiosmosis is the flow of protons from _____ to _____

Proton flow through the enzyme which makes ATP, called _____

A concentration gradient of H⁺ ions is maintained by proton pumps which _____ and by the reaction of oxygen which _____

Photosynthesis is composed of 2 sets of reactions _____ and _____

Photolysis is the splitting of _____ and it occurs in the _____ found in the thylakoid membrane.

Light dependent reactions make _____ (reduced NADP) and _____ which are needed for light independent reactions.

The stroma of the chloroplast is the _____ and this is where the _____ reactions occur.

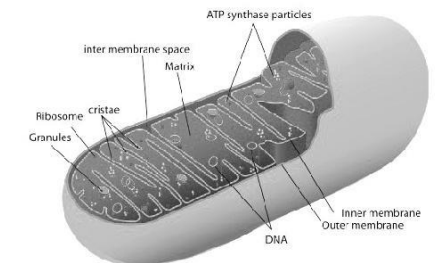
RuBP is the molecule which binds to _____ catalysed by the enzyme _____.

What happens to each of these chemicals in light independent reactions?

Glycerate-3-phosphate

Triose phosphate

Annotate the mitochondrion to show how it is adapted to its function



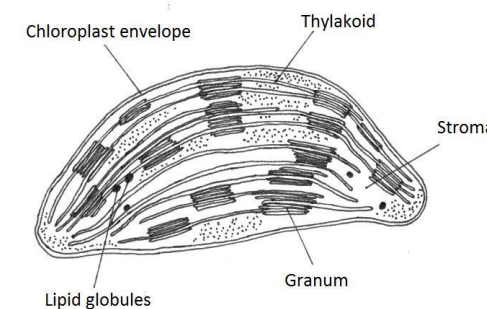
Describe the carboxylation of RuBP

What is Calvin's lollipop apparatus?

Compare & contrast light dependent & independent reactions

Light-dependent	Light-independent

Annotate the chloroplast to show how it is adapted for photosynthesis.



Describe the use of electron tomography

Why is it better than electron microscope imaging?

