Using the curved arrow formalism, show the bond making and bond breaking that occurs in the following reaction.
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In biology, how are phosphate esters prepared?
Using the curved arrow formalism, show the bond making and bond breaking that occurs in the following reaction.

What are the acyclic isomers of the reactant and product?

What is the mechanism that interconverts these acyclic isomers?
Which of the following is a reasonable intermediate in this reaction mechanism?
Using the curved arrow formalism, show the bond making and bond breaking that occurs in the following reaction.
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In glycolysis, the fructose monophosphate is converted into a diphosphate. The diphosphate then undergoes a retro aldol reaction.

What is a retro aldol reaction?
What are the product(s) of the following retro aldol reaction?
Which of the following is not a product retro aldol reaction?
Which of the following is not a product retro aldol reaction?
Which of the following is not a product retro aldol reaction?
Glycolysis: Glucose to glyceraldehyde and pyruvate.
What is a PET image?

A. It is what you get when you take your cat to a photographer.

B. It is what you get when you take an Pulmonary Exercise stress Test.

C. It is what you get when you introduce a radioactive tracer into the body and record the radiation.
A PET image (Positron Emission Tomography) of the human brain?

What is a positron?

A. A new model of car.
B. The name biologist use for a proton.
C. An anti matter particle emitted during radioactive decay.
A PET image (Positron Emission Tomography) of the human brain?

What happens when a positron collides with an electron?

A. They annihilate each other producing a neutron.

B. They annihilate each other producing lots of energy.
A PET image (Positron Emission Tomography) of the human brain?

What happens when a positron collides with an electron?
A PET image (Positron Emission Tomography) of the human brain?

What chemical can we label with a radioactive element to get good brain images?
Fluorine-18 is a positron emitter with a half life of 20 min.
Where is the $^{18}$F be found in the fructose derivative?

2-fluorodeoxyglucose (FDG)
Where is the $^{18}$F be found in the fructose derivative?
What is the major product of the following reaction?

\[ \text{Product} = \text{Reagents} \to \text{Products} \]

\[ \text{C}_7\text{H}_{14}\text{O}_6 \]

\[ A \quad B \quad C \quad D \quad E \]
What is the mechanism of this reaction?
Is this a general reaction?

glycosidation

ribose

guanine
What happens when glucose is treated with NaBH₄?

A NaBH₄ does not react.

β-D-glucopyranose

B

C

D

H₃C

0.003%