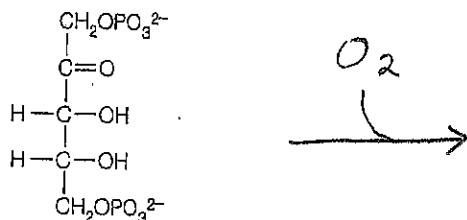


BIOSC 1820
Metabolic Pathways and Regulation
Spring, 2012
Prof. Jeffrey L. Brodsky
Quiz #6
April 11, 2012

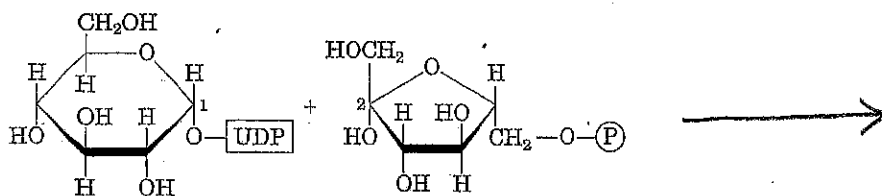
NAME: _____

1. What are the structures AND the names of the products of the following reactions:

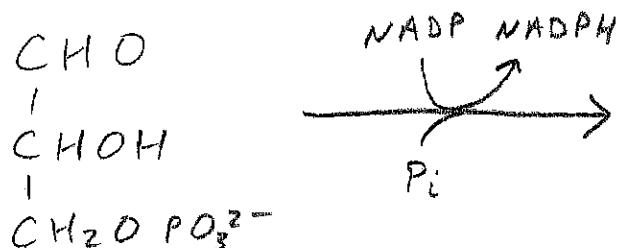
A. (Draw the structures and give the names of the final products)



B. (Draw the structures and give the names of both products)



C.



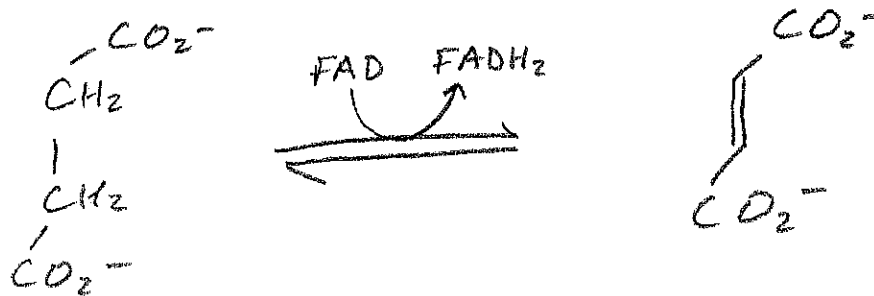
2. In the presence of intense sunlight, _____ can be converted into chloroplasts in plant cells.

3. In which compartment in plants do the following reactions take place?

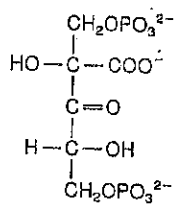
A. _____



B. _____

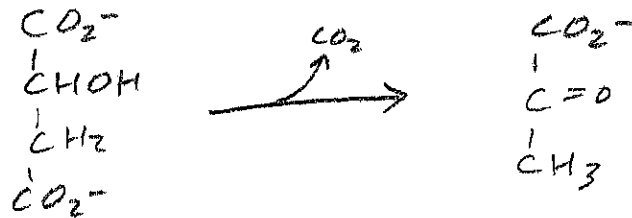


4. The following is an intermediate in the reaction catalyzed by which enzyme (please give the full name)



5. It takes _____ ATPs and NADPHs for a plant cell to “fix” one carbon.

6. What is the name of the enzyme that performs the following reaction?



In which plant cell-type that we discussed is this enzyme found?

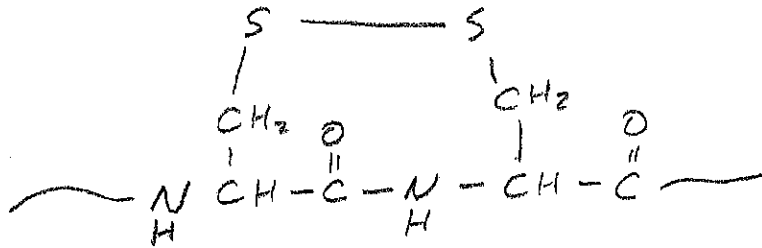
7. If a plant contained a mutant form of phosphofructokinase-2 that was unable to bind to Pi, what effect would this have on hexose utilization in the cell? Why?

8. What are the names of the two antiporters that work together and are critical for ultimately delivering reducing equivalents and ATP into the cytosol from the chloroplast stroma? (you can just give the names of the relevant molecules)

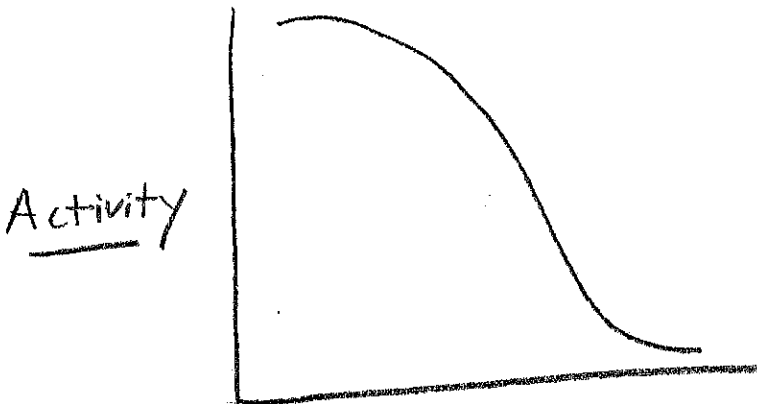
A.

B.

9. The indicated amino acids in a Calvin Cycle enzyme were found to be in the state depicted below. Do you think the enzyme is (A) activated or (B) inactivate? _____



10. The following plot shows an activity relationship for RUBISCO. Label the X-axis to indicate whether the proton concentration (“[H+]”) or “pH” is increasing along this axis:



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