

Recitation 10 Problems

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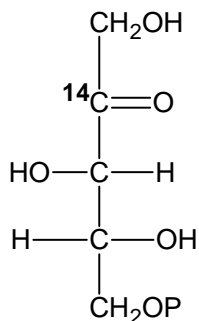
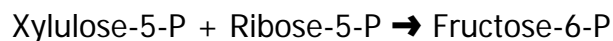
WARM UP QUESTION

Indicate the enzymatic reaction sequence that could account for the overall transformation summarized in the equation shown below. There is no need to include structural formulas in your answer, but please name the enzyme that catalyzes each of the proposed reactions. Note that NADP⁺ is not involved.



QUESTION 1

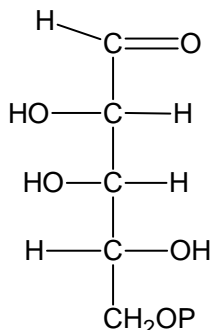
If xylulose-5-P is ¹⁴C labeled as shown below, where would the label end up in the conversion:



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QUESTION 2 (1994 Exam 3, Question 2)

Suppose you have an organism that is capable of converting one mol of fructose-6-P and one mol of the sugar whose structure is shown below to one mol of ribulose-5-P and one mol of glucose-6-P. Two enzymes similar to those that operate in the "pentose cycle" are used in this overall transformation. Please draw mechanisms, with the use of structural formulas, to show this overall conversion:



QUESTION 3 (1999 Exam 3 Question 1)

How many net mols of ATP could be generated by the complete oxidation (to CO_2) of one mol of the following fatty acid? Please use structural formulas to show how the acid is metabolized and give a complete explanation to indicate how much ATP can be produced. Note: If you believe the TCA cycle is involved, there is no need to show the individual reactions of the cycle.

