

Chem 30B Homework Problems

From McMurry, et al. *Fundamentals of General, Organic, and Biological Chemistry*,
7th and 6th Editions

Answers to the even problems are found at the back of the book. If you want or need extra practice, feel free to do the unassigned problems.

Chapter	7 th Edition Problems	6 th Edition Problems
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21 (22 for 6 th Ed)	26, 27, 28, 31, 32 34, 36, 38, 39, 40, 43, 44, 46, 47, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 81, 82, 87, 88, 90, 102	21, 22, 23, 24, 27, 28 29, 30, 31, 32, 33, 35, 37, 38, 39, 42, 43, 45, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 95, 97, 100, 101, 102
22 (23 for 6 th Ed)	18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 31, 32, 35, 36, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 57, 82, 83, 85, 88, 93, *See additional probs below.	14, 15, 16, 17, 18, 19, 22 23, 24, 25, 26, 27, 28, 33, 34, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 57, 58, 81, 82, 83, 85, 86, 88, *See additional probs below.

23 (24 for 6 th Ed)	23, 24, 25, 28-66 (all), 68-75 (all), 84, 85, 86, 87, 89, 97, 98	19, 20, 21, 23 24-72 all, 81, 82, 83, 84, 85, 87, 101
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25 (26 for 6 th Ed)	23 - 28 all 29 - 37 all, 39 - 70 all, 72, 77, 80	19, 20, 21, 22, 23, 24 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 70, 73, 74, 76

***Additional Homework Problems for Chapter 22 (Chapter 23 for 6th Ed): Carbohydrate Metabolism**

(Be able to do this type of problem starting at any point in glycolysis or the citric acid cycle.)

1. Determine the total number of ATP formed by the complete oxidation of 1 mole of glucose. Show your complete work and/or reasoning. List the steps in which ATP, NADH, and FADH₂ are formed, and state how many are formed in each step. Use the "best estimate" values of 2.5 ATP per NADH and 1.5 ATP per FADH₂.
2. Determine the total yield of ATP for the complete oxidation of 1 molecule of 3- phosphoglycerate. Show your work and reasoning, and indicate how many ATP, NADH, and FADH₂ are formed and in which steps. Include ATP produced in the electron transport chain. Express your answer as a range.
3. Determine how many ATP are formed in the complete oxidation of 1 mole of succinate. Include the ATP produced during the electron transport chain. Explain your reasoning clearly, and express your answer as a range.