

## **Chem 30B Homework – McMurry 7<sup>th</sup> Edition**

Answers to the even problems are found at the back of the book, on pages A-13 through A-48. Remember, do not copy the answers from the back of the book or from the solutions manual. Make sure to use your own words for problems requiring explanations.

**If you want or need extra practice, feel free to do the unassigned problems.**

The first set of homework will be assigned at the end of lecture on Thursday January 24, and will correspond to what we have covered in class up to that point. It will be due on Thursday January 31. It will include some but not all of the Chapter 12 homework problems.

### **Chapter 12 Homework Problems**

These problems can be found on pp. 390-393.

# 29, 30, 31, 32, 33, 34, 36, 38, 39, 40, 42, 44, 46, 48, 50, 52, 54, 55, 56, 58, 59, 60, 62, 63, 64, 65, 66, 70, 71, 72, 73

# 22, 23, 24, 25, 26, 27

### **Chapter 13 Homework Problems**

These problems can be found on pp. 427-431.

# 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 42, 44, 45, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 65, 66, 70, 72, 74, 75, 76, 77, 78, 79, 80, 81, 83, 86, 87, 88, 89

# 24, 25, 26, 28

## **Chapter 14 Homework Problems**

These problems can be found on pp. 456-459.

# 26, 27, 28, 29, 30, 32, (33), 34, 36, 38, 39, 40, 41, 42, 44, 46, 48, 50, 51, 52, 54, 55, 56, 58, 60, 61, 62, 63, 69

# 21, 22, 23, 24, 25

## **Chapter 15 Homework Problems**

These problems can be found on pp. 480-483.

# 29, 30, 32, 33, 34, 36, 38, 42, (41), 44, 45, 46, 47, 49, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63

# 23, 24, 25, 27, 28

## **Chapter 16 Homework Problems**

These problems can be found on pp. 509-513.

# 26, 28, 30, 32, (33), 34, 36, 37, 38, 40, 42, 44, 46, 48, 50, 53, 55, 56, 58, 60, 61, 62, 67

## **Chapter 17 Homework Problems**

These problems can be found on pp. 544-547.

# 40, 42, 44, 46, 48, 50, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 79, 80, 81, 83, 86.

## **Chapter 18 Homework Problems**

These problems can be found on pp. 582-585.

# 34, 36, 38, 40, 42, 43, 44, 45, 46, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 64, 65, 66, 68, 70, 72, 74, 75, 84, 87, 90, 96, 100  
and then....  
#28bcf, 29, 32

## **Chapter 19 Homework Problems**

These problems can be found on pp. 618-621.

# 34, 35, 36, 38, 39, 40, 41, 42, 43, 44, 46, 48, 50, 52, 54, 56, 57, 58, 62, 63, 64, 66, 68, 70, 72, 73, 74, 75, 88, 92, 93  
and then....  
#26, 27, 28, 29, 30, 31, 32, 33

## **Chapter 20 Homework Problems**

These problems can be found on pp. 652-655.

# 23, ~~27~~, 29, 30, 32, 34, 36, 39 (draw), 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 68, 70, 71, 72, 73, 74, 76, 78, 89, 91, 92, 93, 94, 97, 102.

## Chapter 21 (Carbohydrates) Homework Problems

These problems can be found on pp. 688-691.

# 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  
and then: #26, 27, 28, 31, 32

## Chapter 22 Homework Problems Carbohydrate Metabolism

These problems can be found on pp. 717-719.

# 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

### Additional Problems for Chapter 22

(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 FADH<sub>2</sub> 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 FADH<sub>2</sub>.
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 FADH<sub>2</sub> 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.

## Chapter 23 Homework Problems

These problems can be found on pp. 753-755.

# 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

#14, 15, 16, 17, 18, 19, 22

### Additional Problems for Chapter 23

(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 FADH<sub>2</sub> 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 FADH<sub>2</sub>.
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 FADH<sub>2</sub> 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.

## **Chapter 24 Homework Problems - Lipid Metabolism**

These problems can be found on pp. 771-773.

# 12-17 all, 19-30 all, 32-46 all, 48 – 51 all, 55, 61, 64, 66, 67, 70, 71, 72, 78, 80

## **Chapter 25 Homework Problems – Nucleic Acids**

These problems can be found on pp. 801-803.

# 29 – 37 all, 39 - 70 all, 72, 77, 80

and then:

# 23 - 28 all