

Selected answers for homework in chapter 21 and 23

21.48 – The two acetyl-S-CoA carbons are oxidized to  $\text{CO}_2$  in the citric acid cycle.

21.62 – The pH differential is caused by the movement of  $\text{H}^+$  ions across the inner mitochondrial membrane. There are more  $\text{H}^+$  ions in the intermembrane space than in the mitochondrial matrix.

23.32 – Both answers in the book are correct, but (2) does not really answer the question. NADH is oxidized in the electron transport chain, but only in the presence of oxygen (aerobic conditions). The question specifies anaerobic conditions. The other pathway for anaerobic oxidation of NADH is fermentation. Here pyruvate is converted to carbon dioxide and ethanol.

23.62 – You do not need to know the numbers, but it is important to realize that fasting levels of glucose in a person with diabetes are much higher than normal.