

SUGGESTIONS FOR FURTHER READING

A. General information on metabolic pathways

- ALBERTS, B., D. BRAY, A. JOHNSON, J. LEWIS, M. RAFF, K. ROBERTS, AND P. WALTER, *Essential Cell Biology: An Introduction to the Molecular Biology of the Cell*, Garland Publ., Inc., New York, 1998.
- BLACK, J. G., *Microbiology: Principles and Applications*, 3d ed., Prentice Hall, Upper Saddle River, NJ, 1996.
- MADIGAN, M. T., J. M. MARTINKO, AND J. PARKER, *Brock Biology of Microorganisms*, 8th ed., Prentice Hall, Upper Saddle River, NJ, 1997.
- MORAN, L. A., K. G. SCRIMGEOUR, H. R. HORTON, R. S. OCHS, AND J. D. RAWN, *Biochemistry*, 2d ed., Prentice Hall, Upper Saddle River, NJ, 1994.

B. Specific information on interaction of metabolism and product formation

- CRUEGER, W., AND A. CRUEGER, *Biotechnology. A Textbook of Industrial Microbiology* (T. D. Brock, ed., English edition), 2d ed., Sinauer Associates, Inc., Sunderland, MA, 1990.
- NEWAY, J. O., *Fermentation Process Development of Industrial Organisms*, Marcel-Dekker, Inc., New York, 1989.

PROBLEMS

- 5.1. Cite the ATP-consuming and ATP-generating steps in glycolysis.
- 5.2. Briefly specify major functions of the TCA cycle.
- 5.3. What are the major control sites in glycolysis?
- 5.4. What is the Pasteur effect? Explain in terms of regulation of metabolic flow into a pathway.
- 5.5. How is glucose synthesized from pyruvate?
- 5.6. Explain the major functions of the dark and light reaction phases in photosynthesis.
- 5.7. What are the major differences in photosynthesis between microbes and plants?
- 5.8. What is transamination? Provide an example.
- 5.9. Briefly explain the Crabtree Effect.
- 5.10. What are the major steps in aerobic metabolism of hydrocarbons? What are the end products?
- 5.11. What is nitrogen fixation? Compare the aerobic and anaerobic nitrogen fixation mechanisms.