**Lehninger Principles of Biochemistry, 5th Edition**

P643 7, 9

P644 11, 16,

P645 28

or

**Lehninger Principles of Biochemistry, 6th Edition**

P662 7, 9, 11

P663 16

P664 28

or

**Lehninger Principles of Biochemistry, 7th Edition**

P644 7, 9

P645 11, 16

P646 26

**Extra question:**

You and your fellow students find it difficult to believe that the oxidation of a two-carbon acyl compound requires a pathway as complex as the citric acid cycle. In order to verify the metabolic pathways you have been learning about, you conduct an experiment using a sample of glucose radioactively labeled with 14C at **C-1**. If the information you have learned is correct, in which glycolytic or citric acid cycle intermediate, and on which carbon, should you find the label:

(a) if O2 were unavailable?

(b) in the presence of malonate?

(c) after one round of the citric acid cycle?

(d) after three rounds of the citric acid cycle?