PRACTICE: GLUCONEOGENESIS

31. An enzyme used by both glycolysis and gluconeogenesis is:
    a. phosphofructokinase-1
    b. hexokinase
    c. pyruvate kinase
    d. glucose-6-phosphatase
    e. 3-phosphoglycerate kinase

32. What enzyme used in gluconeogenesis reverses the action of the glycolytic enzyme phosphofructokinase?
    a. Glucose 6-phosphatase
    b. Pyruvate carboxylase
    c. Phosphoenol carboxykinase
    d. Fructose 1,6-bisphosphatase
    e. Hexokinase

33. Which of the following statements about gluconeogenesis is **false**?
    a. For starting materials, it can use carbon skeletons derived from certain amino acids.
    b. It consists entirely of glycolytic reactions working in reverse.
    c. It employs the enzyme fructose-1-6 bisphosphate phosphatase-1
    d. It is one of the ways all mammals maintain blood glucose between meals
    e. It requires ATP and GTP

34. Pyruvate cannot be directly converted to phosphoenolpyruvate (PEP):
    a. it must first be converted to oxaloacetate, that is then converted into PEP
    b. it must be converted at the cost of 2 ATP
    c. because the reaction of pyruvate kinase is so energetically favorable
    d. Both a and b
    e. Both a and c

35. Glycolysis and gluconeogenesis are highly regulated; why is it important that these metabolic pathways are tightly controlled?