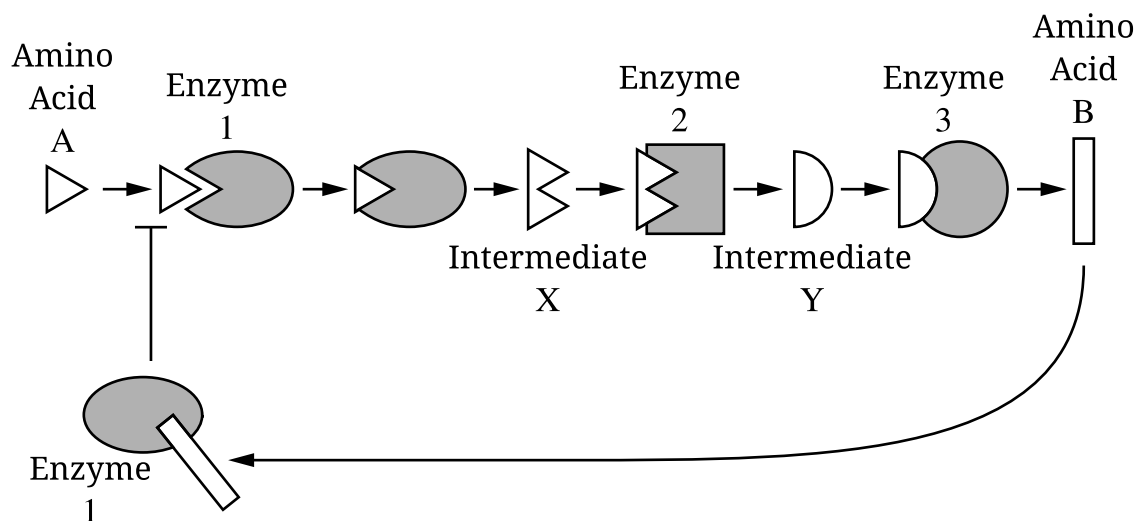


5. Figure 1 shows the reactions of the metabolic pathway used to synthesize amino acid B from amino acid A in cells.

Figure 1. Synthesis of amino acid B from amino acid A



- A. Describe** a characteristic of an enzyme's active site that allows it to catalyze a specific chemical reaction.
- B.** Based on Figure 1, **explain** how the binding of amino acid A to enzyme 1 is regulated by amino acid B.
- C.** Using the information in Figure 1, **identify** the product of the reaction catalyzed by enzyme 2: intermediate X, intermediate Y, or amino acid B.
- D.** Based on Figure 1, **explain** how a change in pH could affect enzyme 3 in such a way that amino acid B cannot be produced.