The of an enzyme-catalyzed reaction increases as the

The enzyme amylase will catalyze the hydrolysis of starch to maltose when the pHis near 7. 0. But when the HCl is added to the solution the amylase will bedenatured which results in the enzyme being deactivated. The iodine serves as anindicator for the presence of starch. Iodine (I2) will reach with iodide ion toproduce the I3- ion. This ion will form a dark blue complex with the starchmolecule.

Like most chemical reactions, the rate of an enzyme-catalyzed reactionincreases as the temperature is raised. A ten degree Centigrade rise intemperature will increase the activity of most enzymes by 50 to 100%. Variationsin reaction temperature as small as 1 or 2 degrees may introduce changes of 10to 20% in the results. In the case of enzymatic reactions, this is complicatedby the fact that many enzymes are adversely affected by high temperatures. Asshown in Figure 13, the reaction rate increases with temperature to a maximumlevel, then abruptly declines with further increase of temperature. Because mostanimal enzymes rapidly become denatured at temperatures above 40? C, most enzyme determinations are carried out somewhat below that temperature. Overa period of time, enzymes will be deactivated at even moderate temperatures.

Storage of enzymes at 5? C or below is generally the most suitable. Someenzymes lose their activity when frozen. .

As amylase breaks down starch, lessand less starch will be present and the color of the solution (if iodine isadded) will become lighter and lighter. Enzymes are biological molecules thatcatalyze many different chemical reactions. With few exceptions, all enzymes areproteins and each enzyme is

specific to a certain chemical reaction. Enzymesmust maintain a specific three dimensional structure in order to functionproperly. If an enzyme’s structure is altered (by heat or harsh chemicals) itmay not function at all.

This breakdown (denaturation) of an enzyme’s. Chemistry