

Enzymes

what

how

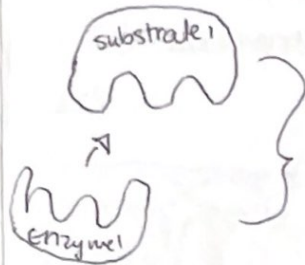
temperature effect

pH affect

investigations

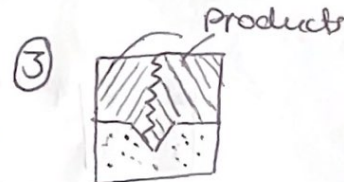
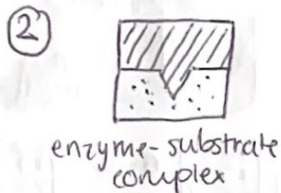
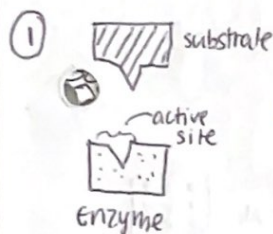
What are enzymes

- catalysts (biological) → speed up rate of reaction
- without being changed in reaction
- necessary: maintain reaction speed in metabolic reactions to sustain life



enzyme specificity

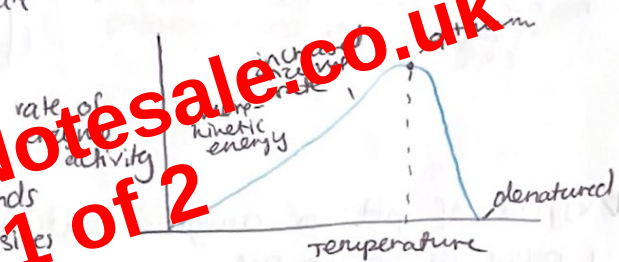
enzymes = specific to one particular substrate
complementary to enzyme



Temperature

- Proteins, specific shape, held in place by bonds
- bonds important at active sites
- E's work best at optimum temperature (37° in body)

exceeded = bonds broken = denaturation - irreversible



pH effect

- most = 7, some produced in acidic conditions eg. stomach (pH 2) / alkaline
- pH too high / too low → bonds that hold amino acid chain together = destroyed = denaturation
- depends on place in body of work

Examples

- Amylase - produced mouth/pancreas into duodenum - starch → smaller sugars (maltose)
- Pepsin - stomach, protein molecule into amino acid
- Trypsin - pancreas into duodenum, protein → amino acid
- lipase - pancreas into duodenum, lipids → fatty acids + glycerol
- maltase - small intestine maltose → maltase = glucose