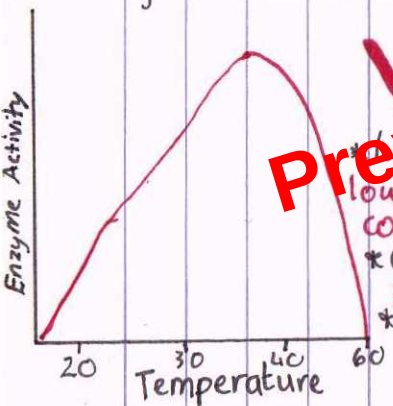
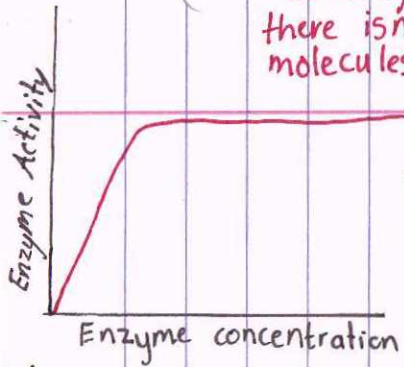
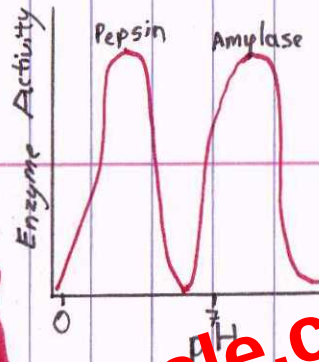


* level off = rates level off as enzyme conc. increases as there isn't enough substrate molecules left to react with enzyme

* As conc. increases so does enzyme activity



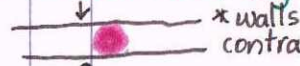
Effect of temp/pH/conc.
low temp = low KE so there are fewer collisions = enzyme activity low
* Optimum temp = between 35-40
* High temp = enzymes denatured



- 1) Pepsin (protease) acts in acidic conditions in stomach
- 2) Amylase = acts in neutral/slightly alkaline conditions

- 1) Mouth (buccal cavity)
 - mechanical breakdown
 - chemical = amylase breaks down starch → sugar

- 2) Oesophagus
 - food moves to stomach by peristalsis



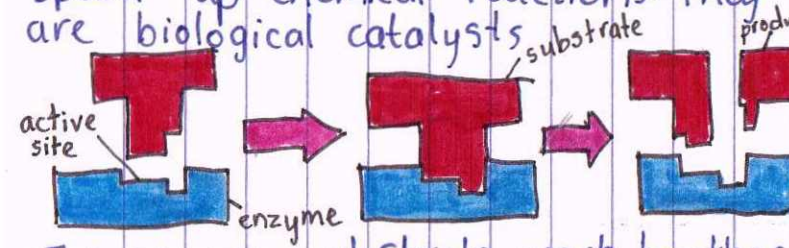
- 3) Stomach
 - produces gastric juices contain acid + protease (protein → AAs)
- 4) Liver = produces bile which neutralises stomach acid + emulsifies fat



- 5) Gall bladder = stores bile
- 6) Pancreas = releases pancreatic juice containing enzymes to act in duodenum
- 7) Duodenum = site of digestion
- 8) Colon = (large intestine) absorption of H₂O
- 9) Ileum / small intestine = site of starch, protein, fat digestion + absorption
- 10) Rectum = waste food stored
- 11) Anus = site of egestion

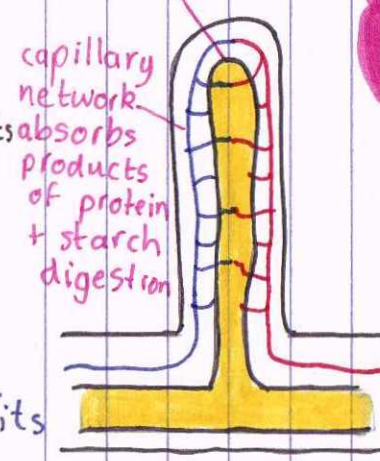
Digestion + Enzymes

- * Catabolic = breakdown of substrate to form 2 (or more) products
- * Anabolic = joining together of two substrates to form a product!
- * Enzymes are special proteins that help speed up chemical reactions. They are biological catalysts



- The enzyme + substrate work together like a lock and key. Each enzyme fits only, one substrate = enzyme specificity

Lacteal absorbs fatty acids + glycerol returns to blood later



Absorption

The ileum has...

- * a large SA = long length, numerous folds and lots of villi
- * thin + permeable membranes
- * a good blood supply to ensure a conc. grad is maintained

Digestion is the breakdown of large complex, insoluble molecules into small, simple, soluble ones

* The alimentary canal is the organ system adapted to enable digestion to be carried out.