Grade 10 digestion work sheet.

explain the properties, role and importance of enzymes involved in digestion; Include site of production. 1.21 investigate the effects of temperature and pH on the activity of the enzymes, amylase and catalase in the digestive process;*

Instruction :

1. Read and make notes from the content below and answer the questions at the end.
2. Watch the video in this link www.youtube.com/watch?v=EhI6dIluqVM
3. Send answers to kcirreds@yahoo.com . be sure to put your **name** , **grade** and **the topic** in the subject bar.
4. Check the WhatsApp group for explanations, videos and links to videos. If you are not in the group by now please send a request to 1-876-388-7594**. or** ask Miss Taguean Thomas , Miss A. Robinson, Miss M. Scarlett, Miss K. Smith, or Miss A. Bernard to add your number to the group.

CHEMICAL DIGESTION — This is the process in which food is broken down from a complex form by chemical substances known as enzymes.

Enzymes — these are biological catalysts which alters the rate of reactions *generally digestive enzymes speed up the rate of reaction* There are three main types of enzymes.

- 1 Lipase -Fat
- 2 Carbohydrase- Carbohydrate
- 3 Protease- proteins

Categories of digestion enzymes contain specific enzymes of varying names belonging to each category. The substance that enzymes digest is called substrate and the substance that is form is called the product.

STARCH $\xrightarrow{\text{AMYLASE}}$ MALTOSE
(Substrate) (Enzymes) (Product)

PROPERTY OF ENZYMES

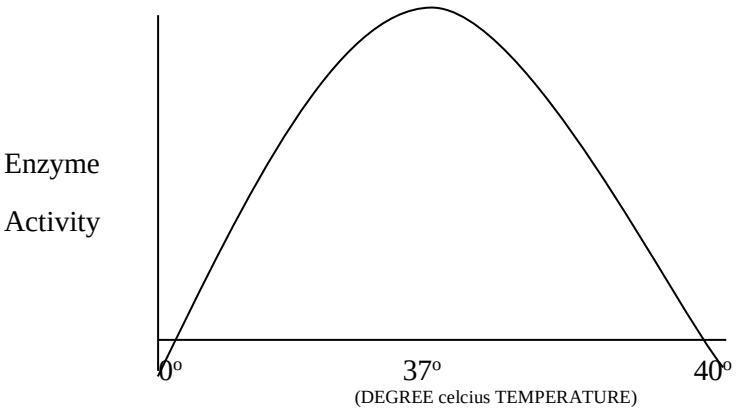
- 1 All enzymes are protein
- 2 All enzymes are specific
  (Enzymes only work on a specific substrate)
- 3 Enzymes works at a specific pH

pH scale

<-1-----2-----3-----4-----5-----6-----7-----8-----9-----10-----11-----12-----13-----14->
(ACIDIC) (Neutral) (ALKIALINE)
INCREASINGLY ACIDIC INCREASINGLY ALKALINE
←---------- ----------→

pH this is a measure of how acid or alkali a substsnce is.

- 4 Enzymes works best at a specific temperature and the temperature it works best with the optimum temperature. The optimum temperature for enzymes in the body is the body temperature which is 37°C . Enzymes are denatured (destroyed) by high temperature. Enzymes deactivated (inactive) at low temperature.



- 5 Enzymes can be use more than once
- 6 Enzymes can be poisoned

Questions

1. Define digestion.
2. Name the two types of digestion?
3. Define a) mechanical digestion and b) chemical digestion.
4. What are the main categories of enzymes?
5. Carbohydrates are broken down by what type of enzyme?
6. What is a substrate?
7. Name the product of the enzyme amylase and it's substrate.
8. What is meant by the term h?
9. What is meant by the term optimum pH?
10. What happens when enzymes are put to work in a low temperature?
11. Explain what happens when enzymes are put to work in temperatures and are very high?
12. What is the optimum temperature of enzymes in the body?
13. Explain why ackee is not poisonous when fully ripe and eaten raw?
14. Explain why active is dangerous when cooked with other foods?
15. What effect does temperature have on ackee?
16. What makes ackee poisonous?

FOR the ackee questions be sure to see the video I made and posted to the WhatsApp group before attempting to answer