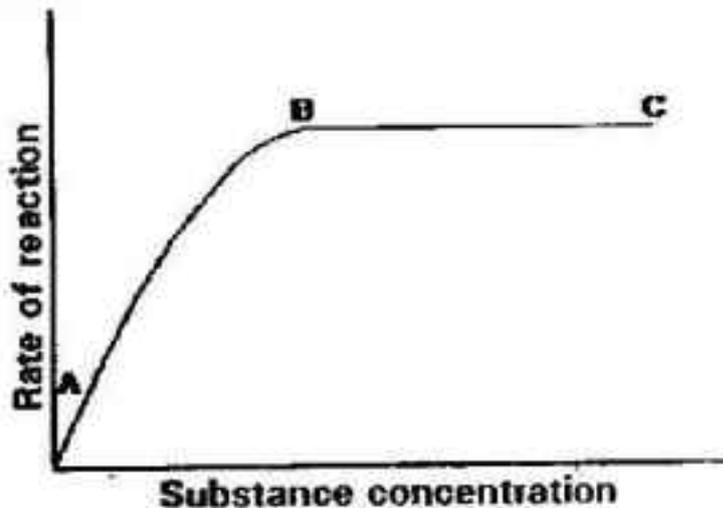


# Nutrition in Plants and Animals Questions and Answers - Form 1

## Biology Topical Revision

### Questions

- An experiment was carried out to investigate the rate of reaction shown below.  
 $\text{Sucrose} \rightarrow \text{Fructose} + \text{Glucose}$   
 For the products; fructose and glucose to be formed, it was found that substance K was to be added and the temperature maintained at  $37^{\circ}\text{C}$ . When another substance L was added, the reaction slowed down and eventually stopped.
  - Suggest the identity of substances K and L. (2mks)  
 K \_\_\_\_\_  
 L \_\_\_\_\_
  - Other than temperature state three ways by which the rate of reaction could be increased. (3mks)
  - Explain how substance L slowed down the reaction. (1mk)
- State the role of light in the process of photosynthesis. (2mks)  
 Name one product of dark reaction in Photosynthesis (1mk)
- State one effect of magnesium deficiency in green plants.
- The graph below shows the effect of substrate concentration on the rate of enzyme reaction.



- Account for the shape of the graph between
    - A and B (3mks)
    - B and C (2mks)
  - How can the rate of reaction be increased after point B? (1mk)
  - State two factors that affect the rate of enzyme reaction. (2mks)
- State the function of co-factors in cell metabolism. (1 mk)
  - Give one example of a metallic co-factor. (1 mk)
- Name two mineral elements that are necessary in the synthesis of chlorophyll. (2mks)
  - What is the role of the vascular bundles in plants nutrition? (3mks)
  - Describe what happens during the light stage of photosynthesis. (3mks)
  - Photosynthesis takes place in two stages.
    - Name the part of the chloroplast where
      - Light stage occurs
      - Dark stage occurs (2mks)

- a. Salivary glands
  - b. Pancrease
  - c. Liver (3mks)
32. State any three functions of the mucus, which is secreted along the wall of the alimentary canal. (3mks)
33. Explain why the digestion of starch stops after food enters the stomach. (3mks)
34. Give an account of the adaptation of a named herbivore to its mode of feeding. (3mks)
35. What are the contents of gastric juice and what is their role in digestion. (6mks)
36. Liver damage leads to impaired digestion of fats . Explain the statement. (3mks)
37. For each of the following nutrients give one example of a good source and one example of its role in the body.

Nutrient	Food source	Role in the body
Vitamin A		
Iron		
Iodine		
Vitamin D		
Protein		

(10mks)

## Answers

1.
  - a. K- Enzyme , sucrose, invertase  
L- Inhibitor
  - b. Additional of sucrose/substance, Addition of enzyme, Optimum PH, Removal of products.
  - c. Complete with substrate for active site of the enzyme.
2.
  - a. Split water molecules/photolysis
  - b. Glucose
3. Yellowing of leaves/stunted growth/chlorosis/lack of chlorophyll.
4.
  - i. A and B -more active sites of enzymes available for a large number of molecules of substrate. There is increase in rates of reaction
  - ii. B-C  
- Enzyme/substance are in equilibrium. All active sites are occupied hence rate of reaction is constant.
  - b. Raising concentration of enzymes
  - c. PH, temperature, inhibitors/cofactors.
5.
  - a. Substances that activate enzymes
  - b. Iron/Magnesium/Zinc/Copper.
6. - Magnesium,  
- Nitrogen  
- Iron
7. **Xylem**  
- Transport water to photosynthesizing cells from stem