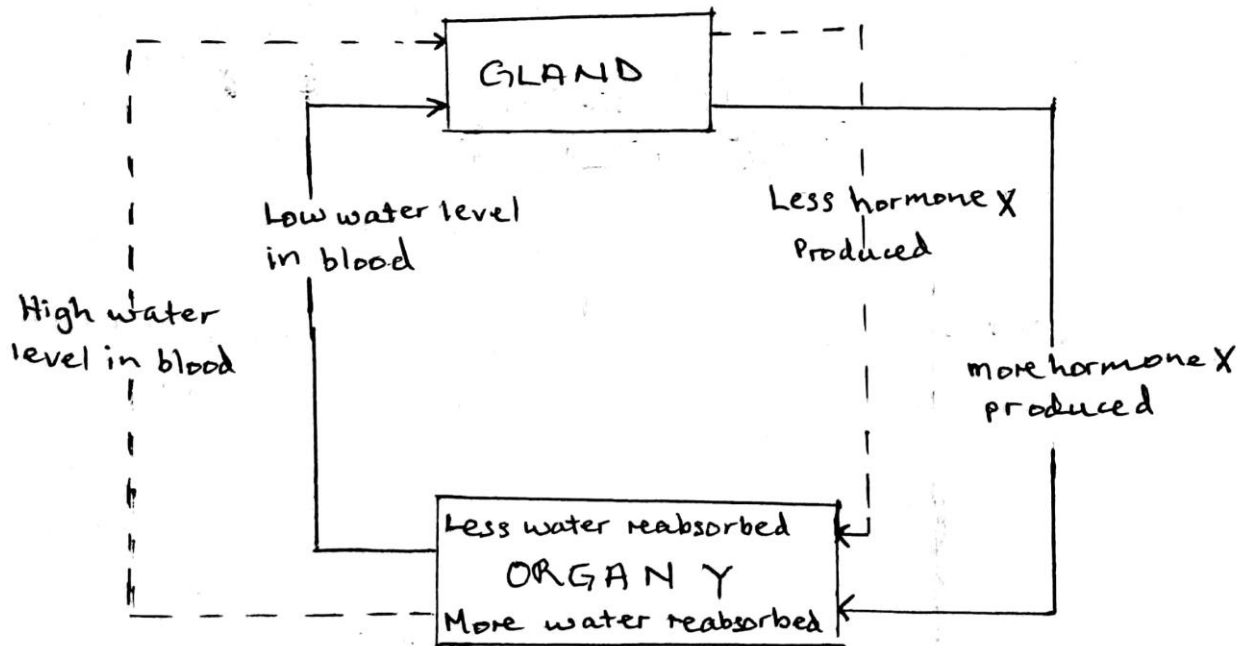


FORM FIVE BIOLOGY HOLIDAY PACKAGE

AHMES SECONDARY SCHOOL

1. (a) Identify different types of membrane found in living organisms.
(b) Briefly explain the concept that cell membrane is partially permeable.
(c) Describe the structure of nucleus and states how it suit to its functions.
2. (a) Explain characteristics of water makes it important fluid in living organisms.
(b) Differentiate between fibrous and globular protein.
3. (a) Why was Linnaeus system of classification considered as an artificial system?
A cell is said to be both structural and functional unit of life. Explain
4. (a) Explain functions of exoskeleton in an organism.
(b)(i) Mention disadvantages of exoskeleton.
(ii) Explain how to overcome disadvantages of exoskeleton.
5. (a) Distinguish between structural and function proteins.
6. (a) Draw a large diagram of a typical plant cell as seen under the electron microscope. Indicate using letters below, the cellular structures concerned with:
 - Cellular respiration
 - Protein synthesis
 - Photosynthesis
 - Transport and modification of cellular proteins and lipids
 - Transport and provision of surface area for lipids and steroid synthesis
 - Transport of cellular proteins
 - Control exchange of materials between cells
 - Control cell division(b) What are the possible roles of the cell wall?
7. (a) Describe three (3) ways of obtaining gaseous oxygen in terrestrial flowering plants.
(b) Briefly explain why the oxidation of fats liberates more than double the energy of the same quantity of carbohydrate.
8. Mention three distinctive characteristics of **any five** classes of phylum Chordata.
9. With the aid of example classify enzymes based on type of reaction catalyzed.
10. With the aid of diagram explain how organic material are transported as per munch hypothesis theory.

11. (a) Explain events of citric acid cycle.(b) Briefly explain significance of Respiratory quotient.
12. (a) Explain transmission of nerve impulse across the synapse.
(b) Explain how synapse ensure unidirectional flow of nerve impulse.
13. Explain 5 different urinary system disorders.
14. (a) Explain events of hatch slack pathway
(b) Explain how C4 plant is efficient than C3 plant give four points.
15. Explain concept of counter current multiplier system.
16. Alternation of generations in plants is a survival strategy in solving one of terrestrial problems in course of taking off to land during evolution. It involves two generation individuals in lower plants but the necessitated two in one individual in higher plants. Discuss as to why and how.
17. (a) The diagram below represents a control system for fluid level in mammals.



- (i) What is the name given to a mechanism such as represented above?
- (ii) Identify hormone X.
- (iii) Name the gland that secretes the hormone.
- (iv) How does the hormone reach the target organ Y?
- (v) Identify organ Y.

(b) Hormones resemble and yet differ from enzymes. Explain.

18. (a) State the physiological importance of the following structural components of the plasma membrane.
- i. Proteins
 - ii. Carbohydrates
 - iii. Cholesterol
- (b) Explain why non polar (lipid soluble) molecules diffuse more rapidly through membranes than polar (lipid insoluble) molecules.
19. (a) Using the active potassium transport theory explain the mechanism of opening and closing of stomata. Draw a well labeled diagram structure of cells that support the mechanism of opening and closure of stomata.
- (b) A farmer stored maize for seeds in airtight metallic drum for use after one year. He was preserving the seeds against seed borer insects. After planting the seeds, that was when he released the serious mistake committed. What was the mistake and how did it amount to what damage observed?
20. (a) Briefly describe the structure of the mitochondrion.
- (b) How are mitochondria suited for their functions?
- (c) State two structural differences between mitochondria and chloroplasts.
- (d) Mitochondria and chloroplasts are said to be semi-autonomous. Explain this statement.