LHS HOLIDAY PACKAGE ASSIGNMENTS BIOLOGY
SENIOR THREE

TEST ONE

1 (a) What are the characteristics of a respiratory surface?

(b) Describe how the respiratory surfaces in each of the following is adapted for its function.

(i) Man (ii) Insect (iii) Fish

2. S.2 students carried out an experiment to determine the percentage of air in soil samples P Q and R obtained from three plots in the school farm. The results obtained are shown in the table below;

Type of soil	Volume of soil/cm3	Volume of water added / cm3	Volume of soil and water after stirring / cm3
P	50	100	125
Q	100	250	325
R	100	180	200

a) Calculate the percentage of air in each soil sample
b) Identify the soil type from above that would drain best
c) Suggest the identities of the soil types P and R.
d) State three importance of soil air.

3.(a) What is metamorphosis?

(b) State three structural differences between a male and a female cockroach.
(c) Describe how the cockroach is suited to survive in its habitat.
(d) State the economic importance of cockroaches.

4. a) What is self pollination

b) Explain how self-pollination is naturally prevented in plants?

c) Describe the features of a flower that favour pollination by insects.

5. a) Describe the digestion of cooked cassava and eggs in a mammal.

b) How is the absorptive surface of the alimentary canal adapted for its functions?

c) What is the importance of bile in digestion?

d) What is the fate of the products of digestion after absorption?

6. a) What are the functions of blood?

b) Differentiate between arteries and veins.

c) How are red blood cells adapted for its functions?

TEST TWO

1. a) The smallest viruses each consists of nucleic acids inside a protein coat. In the cells of living organisms, viruses form exact replicas of themselves.

(i) Describe the ways in which viruses resemble a living organism (ii)

Describe two ways in which a virus resembles a non living matter.

(ii) What effect would viruses have on host cells?

b) Give three examples of viruses and describe how they are transmitted.

2. (a) what is an enzyme?

(b) State any three properties of enzymes.

(c) Complete the table below by filling in the examples of physical digestion, the part of alimentary canal, where it takes place and one importance of physical digestion in the human body.

Example of physical digestion	Part of alimentary canal	Importance
(i)		
(ii)		
(iii)		

3. a) Using a well labelled diagram, describe the structure of an animal cell.

b) State the functions of any four parts labelled in (a) above.

c) How does a plant cell differ from a bacterial cell?

4. a) Describe the nitrogen cycle

b) What is the significance nitrogen cycle in an ecosystem?

5.a) What is osmosis?

b) Describe an experiment to demonstrate osmosis in a named plant material.

c) State the importance of osmosis to plants.

6.a) Describe the mechanism of gaseous exchange in a cockroach.

b) Outline the adaptations of the tracheal system for gaseous exchange.

TEST THREE

1.a) Using well labelled drawings only, distinguish between the internal structures of the dicot root and dicot stem.

b) How are stems modified to perform extra functions in plants?

2.a) Describe an experiment to compare the drainage of different soil samples.

b) What is the significance of water and air in soil?

3. State the economic importance of bacteria, giving an example in each case.

4.a) How are plant leaves adapted to for maximum absorption of sunlight.

b) Describe any five factors that affect the rate of photosynthesis.

5.a) What is anaerobic respiration?

b) How is anaerobic respiration different from aerobic respiration?

c) Of what importance is anaerobic respiration to humans.

6.a) Define the term nutrition

b) Write short notes about the following terms, giving examples in each case.

(i) Autotrophic nutrition

(ii) Heterotrophic nutrition

(iii)Saprophitic nutrition

(iv)Holozoic nutrition

END