BIOLOGY REVISION FOR S3

Instruction: **Better revise notes of S1, S2 and S3 before starting exercises.**

1. a) Name the five kingdoms in the biological classification system.

   b) State the kingdom to which each of the following organisms belongs

   i) Mango ii) Mushroom iii) Earthworm iv) Amoeba v) Bacteria

2. a) Complete the following table showing excretory organs their products and excretory substances.

Excretory organ	Product	Excretory substance
Kidney	------	------
Skin	------	------
Lungs	------	------
Liver	------	------

3. Choose the correct answer :

   i) The exchange of gases takes place in tiny air sacs know as:
   a) Ravioli b) Villi c) Bronchi d) Alveoli

   ii) The organ of the body where gaseous exchange takes place is the:
   a) Liver b) Lungs c) Trachea d) Heart

   iii) Which of the following is a form of nitrogenous waste excreted by the kidneys?
   a) Carbon dioxide b) Ammonia c) Water d) Urea

4. Photosynthesis is a process that takes place in green leaves.

   i) What type of energy is needed for this process?

   ii) What substance(s) in the plant that absorbs this energy?

   iii) In which part of the plant cell does photosynthesis take place?

   iv) Write the chemical equation for photosynthesis.

5. Match the following ecological terms with their definitions.

   a) Community - A place where an organism lives

   b) Ecosystem - A number of species interacting in locality

   c) Food web - A nutritional interrelationship of organisms

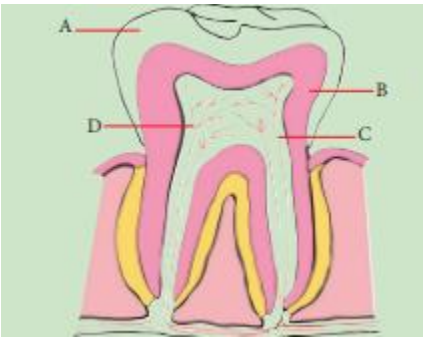
   d) Habitat - Interaction of organisms with each other and with their abiotic environment.

6. Our bodies are made of cells that carry out several metabolic and physiological processes. Therefore substances are always moving into and out of the cells.
   a) State 3 processes by which substances move in and out of the cell.
   b) Differentiate those 3 processes in (a)
7. The following are various sub-units into which species of plants or animals can be divided: cell, organ, organelle, organism, tissue, organ system.

a) Arrange them in order starting with the simplest and ending with the most complex.

b) Which of them can be applied to the following:
   i) A cat?
   ii) Amoeba?
   iii) Leaf?
   iv) Chloroplast?
   v) Alimental canal

8. Fats and oils, like carbohydrates, are made of carbon, hydrogen and oxygen. Although they have similar properties, fats differ from oil. State 2 differences between fats and oils.
9. Study the diagram below then answer the questions that follow.



a) Name the parts labelled A,B,C,D.

b) Identify the type of tooth and give one reason for your answer.

c) What organism is responsible for decaying teeth?

11. a) The following are types of nutrition. In each type, give an example of an organism or organisms in which it takes place.

a) Holozoic nutrition

b) Saprophytism

c) Parasitism

b) Fill the gaps in the table below.

Name of enzyme	Grand secreting the enzyme	substrate	Products	Medium
Amylase		Starch	Maltose	
Pepsin				
		Lipids		

c) Differentiate between these terms: ingestion, absorption, assimilation, excretion and egestion

12. An investigation was carried out into the effects of PH on the action of the enzyme amylase on starch. Eight test tubes were set up at different pH and incubated in a water bath at 30^0C for one hour. The amount of reducing sugar (product) was then estimated. The results are shown in the following table.

pH	4.0	5.0	6.0	6.5	7.0	8.0	9.0	10.0
Amount of reducing sugar products	1	12	26	32	33	27	13	5

a) Plot a graph to show these results.
b) What is the most suitable pH for enzyme amylase in this investigation
c) Suggest other factors (not in this investigation) that affect the action of enzymes.
d) State any three properties of enzymes

13. a) The table below shows some parts of the cell. Complete this table to show whether those parts are present or not in animal or plant cell. The first is done for you.

PART	PLANT CELL	ANIMAL CELL
Nucleus	✓	✓
Chloroplasts		
Cytoplasm		
Cell wall		
Cell membrane		

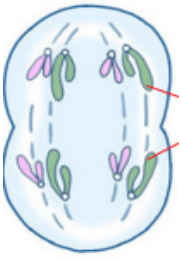
b) What is the function of each of the following cell organelle?

i) Mitochondrion

ii) Chloroplasts

iii) Endoplasmic reticulum.

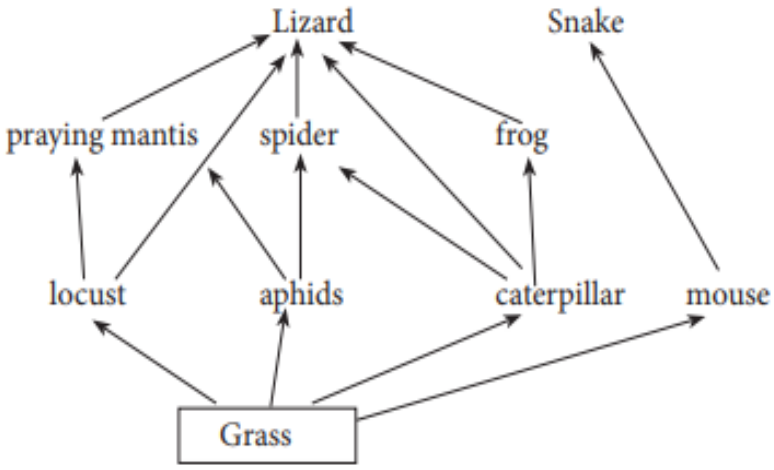
c) The figure bellow shows one of the stages of mitosis of cell division.



i) Which stage is represented in this figure?
ii) Describe the behavior of chromosomes in this stage.

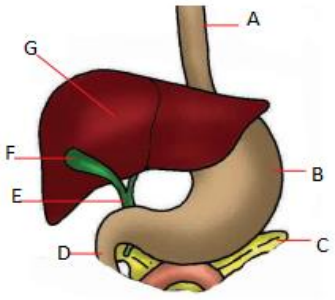
14. a) Differentiate a food chain from a food web.

b) Study the following food web.



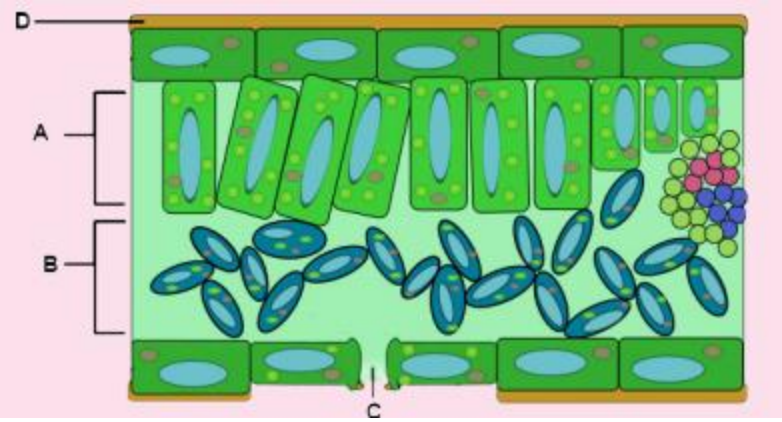
a) State organisms that are primary consumers.
b) Which organism is a producer?
c) State the name given to organisms on the fourth trophic level.
d) Make 4 food chains from the above food web.
e) What would happen if all aphids are removed from the chain?

15. Observe the following diagram



a) Name parts labeled A, B, C, D, E, F, and G.
b) What is the name of the juice secreted by part B? State its component.

16. Use the diagram of the cross-section through the leaf to answer the questions that follow.



a) Indicate on the diagram the following: stomata, spongy mesophyll layer, palisade layer and vascular bundles.

b) Which cell type absorbs most carbon dioxide during the day?

c) State the role of the part labelled D in photosynthesis.

d) Describe ways in which cell type B are suited for photosynthesis.

e) Of what importance is the shape of cells around C in photosynthesis?

f) Differentiate between palisade layer and spongy layer.

g) Describe how chlorophyll molecules in the chloroplast help a leaf to photosynthesize.

PLEASE STAY HOME TO PREVENT THE SPREAD OF CORONA VIRUS