IGIHOZO SAINT PETER

SOUTHERN PROVINCE NYANZA DISTRICT

BIOLOGY HOLIDAY PACKAGE

SUBJECT:	BIOLOGY
CLASS:	SENIOR 2
COMBINATIONS:	ORDINARY LEVEL
DURATION:	3 HOURS

INSTRUCTIONS:

- 1) Do not open this question paper until you are told to do so.
- 2) Answer clearly and correctly. Separate answers by horizontal lines
- This paper consists of two sections: A and B. Section A: Attempt all questions. (70marks)

Section B: Attempt only three chosen questions. (30marks)

4) Use a **blue or black** pen

SECTION A: Attempt all questions /70marks

1. (a) Name two structures possessed by plant cells that are absent in the animal cell.

2marks

	b) List 3 similarities between plant cell and animal cell	3marks
2)	Name the processes by which plant cells obtain their:	

(i)	mineral salts	1mark
(ii)	carbon dioxide	1mark
(iii)	water	1mark

3) a) To which kingdom each of the following organisms belongs? 5marks

- i) Mosquito
- ii) Amoeba
- iii) Mushroom
- iv) Eucalyptus
- v) Plasmodium
- b) Animals and plants carry out common life processes like movement
 Copy and complete the table to name or describe processes
 common to all animals and plants.
 6marks

Name of the life process	Description
•••••	Living things produce offspring
·····	Living things get bigger and develop
· · · · · · · · · · · · · · · · · · ·	Removal of waste products
Respiration	
Feeding or nutrition	
••••	Detects and respond to changes in
	the environment.

 4) a. Pair organisms (A-F) with their structures of gaseous exchange 6 marks
 i. Farth worm
 (a) Tracheoles

i. Earth worm	(a) Tracheoles
ii. Amoeba	(b) Alveoli
iii. Insect	(c) Gill lamellae
iv. Mamrnal	(d) Cell membrane
v. Fish	(e) Skin capillaries
vi. Frog	
vii. Yeast	

b. Explain 2 characteristics of gas exchange structures to their functions

5) a) Define **Warm blooded animal 2marks** b. Group the following organisms into warm blooded animals or cold blooded **animals: frog, bird, lizards, human being and fish 5marks**

6.a) Describe the functions of human skeleton.	3marks
b) Complete the following table	6 marks

Diseases	Deficient nutrients	Symptoms
a)		Soft bones that bend as
		baby grow
••••	•••••	
b)Anaemia		
	•••••	•••••
	••••	
C)	Lack of vitamin C	
•••••		•••••

7. choose the best answer

- (i) Populations of different species living together constitute a
- (a) biome

(b) ecosystem

(ii)All ecosystems of an area characterized by a particular type of climate is called

5marks

(b) community

(c) biosphere

2marks

a) Biome	b) biosphere
c) Community (iii) The non – living factors	c) population of the ecosystem are called
a) biotic factors	b) abiotic factors
c) decomposers	d) producers
(Iv) How much of sunlight e	energy is absorbed by green plants?
a) 10%	b)1%
C)20%	d)100%
(v) sometimes due to loss then the cells are called	s of water, cells become weak and soft,
a) flaccid	b) turgid
c)normal	d) bursting

8. Explain any four (3) economic importance of the phylum arthropod to human beings.

3marks

9. Slices of onion epidermis were placed in different concentrations of sucrose solution.

The percentage of plasmolysis cells was determined after thirty minutes. The results were as follows:

Conc. of sucrose solution (Molar)	0.55	0.6	0.65	0.7	0.75
% of plasmolysed cells	0	5	20	80	100

(a) What does the word plasmolysis mean?	1 mark
(b) What causes plasmolysis of cells?	1mark
(c) Does plasmolysis also occur to animal cells? Explain.	2marks
(d) List 2 importance of turgor pressure in plant organisms	2marks

 a) Explain why in multicellular organisms diffusion alone is not enough to gain useful substances and remove waste products into and out of the body respectively2 marks

b. The following is a list of physiological processes. Match the physiological processes to their correct description.**5 marks**

PHYSIOLOGICAL	DESCRIPTION				
PROCESS	1 The process by which water				
A. Diffusion	molecules move from a region of low				
	concentration to region of high				
	concentration through a				
	semi-permeable membrane				
	2. The process by which molecules				
B. Osmosis	move from a region of high				
	concentration to a				
	region of low concentration				
	3. The process by which substances				
C. Active transport	move across the cell membrane				
	against a				
	concentration gradient				
	4. The process by which materials				
D. Endocytosis	from the inside of the cell are				
	brought to the cell surface within				
	the membrane the				
	membrane bound vesicles				
	The process by which materials				
E. Exocytosis	enter a cell without passing				
	through the cell				
	membrane				

11. You are provided with 2 solutions (solution A and a solution B) which are suspected to contain reducing sugar and starch respectively.

Describe the possible tests you can carry out to confirm that

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Solution A is a reducing Sugar and solution B contain starch

6marks

SECTION B: Attempt any three questions/30marks

12. Use your knowledge of ecology to answer the following questions:



(a) What name is given to the above diagram?(b) What do the arrows on the diagram mean?(c) Green plants are producers. What does this mean?	1mark 2marks 2marks
(d) Name two primary consumers from the above diagram.	2marks
(e) Name two carnivores from the above diagram.	2 marks
(f) Which trophic level does the hedgehog belong to?	1mark

13. A student carried out an experiment below to investigate how a gas is given out during a biological process.



a) Give the name of gas that is collected in a test tube? **1mark**

b) Where does the gas in 13(a) above come from?1markc) During which process is the gas in 13(a) above produced?1mark

d) State 4 conditions under which the mentioned gas in 13 (a) is

produced. 4marks

e) What will happen if the apparatus used is kept in dark place.**1mark**

f) Explain why the process given in 13(c) above may be reduced if there is a deficiency in magnesium ions.

- 14) a) What are enzymes? **2marks**
 - b) List any five characteristics of enzymes.

5marks

- c) Describe how enzymes' activities are affected by pH and Temperature. **3marks**
- 15. Study the diagram below and answer the related questions:



In which area do the plants above grow? 2marks

- a) Explain five characteristics that help the plants on the diagram above to live in their environment.
 5marks
- b) List 3 ways that plants benefits from transpiration **3marks**

16. COVID-19 is a pandemic disease that affect social, psychosocial and economic wellbeing.

a) which pathogen that causes COVID-19? **1mark**

- b) Describe the effects of COVID-19 on economic development. 4marks
- c) Name at least five (5) ways for preventing the spread of COVID-19 **5marks**

END!!!