

Candidate's Examination Number \_\_\_\_\_

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

BIOLOGY

044

TIME: 2:30 HOURS

FRIDAY 01<sup>st</sup> DECEMBER, 2017 a.m

INSTRUCTIONS TO CANDIDATES

1. This paper consists of THREE (3) sections A, B and C.
2. Answer ALL questions in Section A and B, and any TWO (2) questions in section C. Question NINE (9) is compulsory.
3. Write your Examination Number on each page.
4. Write your answers in the space provided.
5. Cellular phones are not allowed in the examination room.
6. Use a blue or black pen in writing. The diagrams must be drawn in a pencil.

FOR EXAMINER'S USE ONLY

QUESTION NUMBER	MARKS	SIGNATURE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9		
10		
11.		
<b>TOTAL</b>		

This paper consists of 11 printed pages



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**Answer ALL questions in this section**

ANSWER KEY  
1. Choose the correct answer and write its letter in the box below.

- ix) Botany is the study of  
 A: Animals      B: Cells      C: Bones      D: Plants
- x) The symptom of a person suffering from HIV/AIDS  
 A: Frequent urination      B: Persistence fever  
 C: Stomach ache      D: Paralysis

**ANSWERS**

i	ii	iii	iv	v	vi	vii	viii	ix	x

2. Match the items from **LIST A** with the responses in **LIST B** by writing the letter in the table below.

	<b>LIST A</b>	<b>LIST B</b>
i.	Locomotory structure in Paramecium	A: Health
ii.	A process without it an organism cannot survive	B: Osmosis
iii.	It breaks fats and oil into small droplets	C: Enzyme
iv.	Minerals required by plants in very small quantity	D: Hormone
v.	A biological catalyst	E: Macro-elements
vi.	It contains green pigment in plants	F: Pseudopodium
vii.	Air sacs for gaseous exchange	G: Cilia
viii.	Physical, mental and emotional well-being	H: Bile
ix.	A substance produced by the body to attack invading pathogens	I: Antibody
x.	The movement of molecules from high concentration to low concentration	J: Mitochondria
		K: Antigen
		L: Pepsin
		M: Chloroplast
		N: Micro-elements
		O: Alveoli
		P: Trachea
		Q: Diffusion
		R : Respiration

**ANSWERS**

<b>LIST A</b>	i	ii	iii	iv	v	vi	vii	viii	ix	x
<b>LIST B</b>										

3. Read the sentences below very carefully and then fill the blank spaces. Use one word for each space.

- a) The failure to \_\_\_\_\_ on a balanced diet results in a condition known as \_\_\_\_\_.
- b) The \_\_\_\_\_ is a muscular tube connecting the \_\_\_\_\_ with the upper part of the stomach.
- c) The respiratory surface of insect is \_\_\_\_\_ whereas that of toad is \_\_\_\_\_.
- d) A \_\_\_\_\_ is a tentative explanation for the observation made while \_\_\_\_\_ is the series of investigations.
- e) Stage is the part on which the \_\_\_\_\_ to be observed is placed and \_\_\_\_\_ is that part used for magnifying the object under observation.

### **SECTION B: (50 Marks)**

**Answer ALL questions in this section**

4. In the table below identify biological names and their functions of the given descriptions.

<b>Descriptions</b>	<b>Biological names</b>	<b>Functions</b>
a) Green pigment in plants		
b) Pale yellow fluid in the blood of mammals		
c) Green liquid squirted bit by bit into duodenum in human		
d) Red pigment in the blood		
e) Small pores in the epidermis of the plants		



A: \_\_\_\_\_

B: \_\_\_\_\_

C: \_\_\_\_\_

D: \_\_\_\_\_

ii) State the function of each part.

A: \_\_\_\_\_

B: \_\_\_\_\_

C: \_\_\_\_\_

D: \_\_\_\_\_

c) Write the name of the organism and its phylum.

\_\_\_\_\_

d) Why the organism is shapeless and soft?

\_\_\_\_\_

7. a) Define the term blood.

\_\_\_\_\_

b) Identify the blood cell that performs the following functions.

i) Helps in fighting disease \_\_\_\_\_

ii) Makes blood clotting \_\_\_\_\_

c) Relate the function of the blood with the following.

i) Digestive system \_\_\_\_\_

ii) Excretory system \_\_\_\_\_

iii) Respiratory system \_\_\_\_\_

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- d) If the heart stops beating and can't be re-started one will die. Justify the statement.

\_\_\_\_\_

- e) Identify the abnormal feature of white blood cells and red blood cells.

White blood cell is \_\_\_\_\_

Red blood cell is \_\_\_\_\_

8. a) Mention three (3) common methods of waste disposal.

i) \_\_\_\_\_

ii) \_\_\_\_\_

iii) \_\_\_\_\_

- b) Design a process that can be used to make new glass bottles from broken glass.

The process is called \_\_\_\_\_

The procedure is \_\_\_\_\_

- c) People have been throwing out a lot of waste carelessly. Point out at least three (3) effects of improper waste disposal.

i) \_\_\_\_\_

ii) \_\_\_\_\_

iii) \_\_\_\_\_

- d) State two (2) ways of reducing waste.

i) \_\_\_\_\_

ii) \_\_\_\_\_

Answer **ANY TWO (2)** questions in this section, Question 9 is **COMPULSORY**

The question has two (2) items (9a) and (9b). Answer either item (9a) or (9b)

9. a) You are given a beaker containing food substances in solution (starch, protein and fats). You are also provided with the reagents. Sodium hydroxide, Dilute hydrochloric acid, Sudan III, Benedict solution and Iodine solution. Perform the experiment to investigate the presence of the food present.

Tabulate your work as:

Test for	Reagent used	Observation
Starch		
Protein		
Fats/Oils		

Show the importance of each food substance to the daily life.

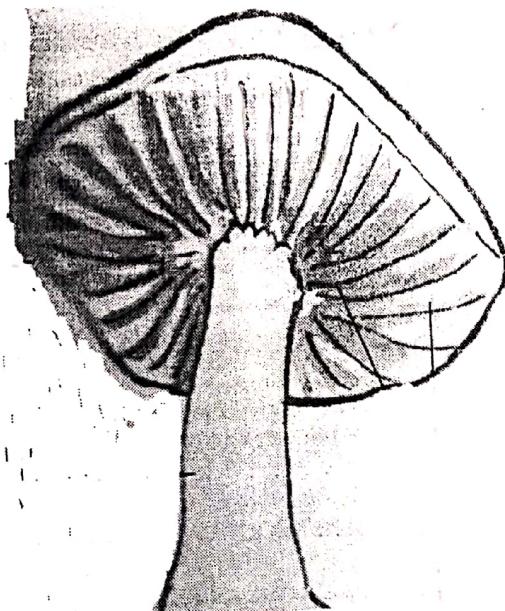
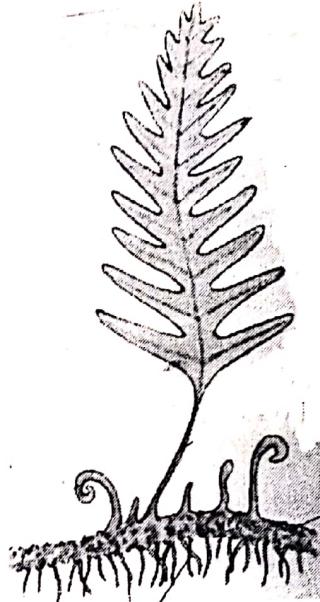
- i) Starch

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- ii) Protein \_\_\_\_\_  
iii) Fats \_\_\_\_\_

b) Study the given drawings of specimens carefully and answer the questions:



R

S

- i) Identify the specimens by their common names.

R \_\_\_\_\_ S \_\_\_\_\_

- ii) Classify the specimens into their kingdom and division

R - Kingdom \_\_\_\_\_ Division \_\_\_\_\_

S - Kingdom \_\_\_\_\_ Division \_\_\_\_\_

- iii) State the mode of nutrition of R and S.

R \_\_\_\_\_ S \_\_\_\_\_

- iv) Identify the mode of reproduction of R and S.

R \_\_\_\_\_ S \_\_\_\_\_

10.

a) Write the meaning of.

i) Biotic factor the env

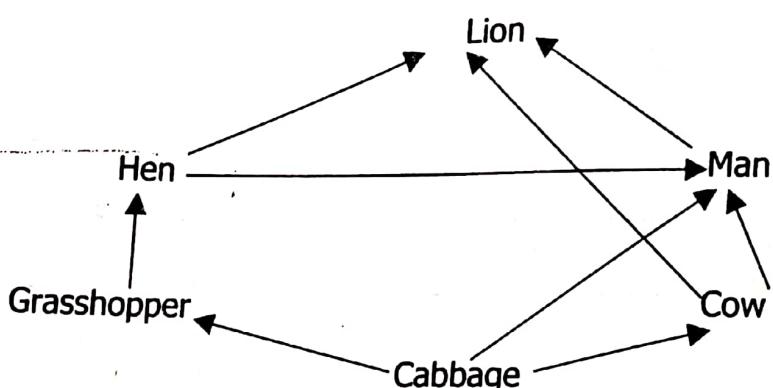
plants, h

ii) Abiotic factor

the env

Text b

b) Study the Figure X below and answer the question.



i) Name the feeding relationship presented by the figure X above:

Food

ii) Predict the missing group in the figure X Missing group

is Decomposer

c) Construct three (3) food chains from the figure X above.

i)

ii)

iv)

- Are those organisms who kill other organisms

sumer - Are organisms which depends nutrient by  
producers,

d) Choose the organism from the figure X which is

- i) Producer cabbage
- ii) Predator Lion
- iv) Primary consumer Man

e) Predict what will happen if the **cabbage** is removed in figure X.



11. a) Mention three (3) infectious diseases of the respiratory system.

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

b) Draw the mammalian respiratory system and label the following parts:

Right and left lung, trachea, diaphragm, alveoli and bronchioles