

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

**SMZ**

**ZANZIBAR EXAMINATIONS COUNCIL  
FORM THREE ENTRANCE EXAMINATION**

**044**

**BIOLOGY**

**TIME: 2:30 HOURS**

**WEDNESDAY 3<sup>RD</sup> NOVEMBER, 2021 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 in each page.**
- 4. Write your answers in the spaces provided.**
- 5. Use blue or black pen in writing. Diagrams must be in pencil.**
- 6. Cellular phones and unauthorized materials are not allowed in the examination room.**

<b>FOR EXAMINER'S USE ONLY</b>		
<b>QUESTION NUMBER</b>	<b>MARKS</b>	<b>SIGNATURE</b>
<b>1.</b>		
<b>2.</b>		
<b>3.</b>		
<b>4.</b>		
<b>5.</b>		
<b>6.</b>		
<b>7.</b>		
<b>8.</b>		
<b>9a.</b>		
<b>9b.</b>		
<b>10.</b>		
<b>11.</b>		
<b>TOTAL</b>		

**This paper consists of 15 printed pages**

**SECTION A: (30 Marks)**

**Answer ALL questions in this section.**

1. Choose the correct answer and write its letter in the table below:
  - i. A person with blood group O has antibodies of
    - A. a
    - B. a and b
    - C. b and o
    - D. b
  - ii. The natural unit which is composed of living and non-living things which interact together.
    - A. Community
    - B. Ecology
    - C. Ecosystem
    - D. Habitat
  - iii. It is trapped by the chlorophylls during photosynthesis.
    - A. Carbon dioxide
    - B. Light
    - C. Carbohydrates
    - D. Water
  - iv. The object to be observed under the microscope is placed on
    - A. Body tube
    - B. Mirror
    - C. Objective lens
    - D. Stage
  - v. The protozoa that has both animal and plant characteristics is
    - A. Amoeba
    - B. Euglena
    - C. Paramecium
    - D. Plasmodium
  - vi. Is a special room designed for carrying out scientific experiments
    - A. Classroom
    - B. Staff room
    - C. Laboratory
    - D. Library
  - vii. Which of the following is fundamental unit of life?
    - A. Cell
    - B. Organ
    - C. System
    - D. Tissue
  - viii. The end product of lipid during digestion is
    - A. Amino acid
    - B. Fats acid and glycerol
    - C. Glucose
    - D. Peptide
  - ix. The type of immunity that child get from mother during pregnancy is
    - A. Artificial active
    - B. Artificial passive
    - C. Natural active
    - D. Natural passive

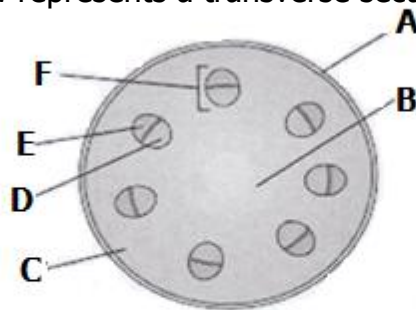


3. Read the sentences below very carefully, then fill the blank spaces. Use one word for each space.
- a. Apparatus used for scooping powder or crystalline substances is \_\_\_\_\_.
  - b. The process by which water evaporates from the plant through the stomata in the leaves is called \_\_\_\_\_.
  - c. Reducing, \_\_\_\_\_ and \_\_\_\_\_ are basic principles of waste disposal.
  - d. Muscles that are found between the ribs are called \_\_\_\_\_ muscles.
  - e. Protein in the diet is needed for growth and body \_\_\_\_\_.
  - f. The leaves of \_\_\_\_\_ plant close when they are touched.
  - g. In classification \_\_\_\_\_ is the highest rank order.
  - h. The study of \_\_\_\_\_ is known as mycology.
  - i. Inadequate amount of fibre in the diet lead to \_\_\_\_\_.

**SECTION B: (50 Marks)**

**Answer ALL questions in this section.**

4. The **Figure 1** below represents a transverse section of a young plant body part.



**FIG.1**

- i. Label the parts numbered A - F

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

D. \_\_\_\_\_

E. \_\_\_\_\_

F. \_\_\_\_\_

ii. What part of the plant body does the diagram represent?

\_\_\_\_\_

iii. Does the diagram represent a monocot or dicot?

\_\_\_\_\_

iv. Give two (2) reasons for your answer in (iii) above.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Gastric hormone stimulates the production of gastric juice from the gastric glands.

a. List three (3) components of gastric juice of man and state the function of each.

i. Component \_\_\_\_\_

Function \_\_\_\_\_

\_\_\_\_\_

ii. Component \_\_\_\_\_

Function \_\_\_\_\_

\_\_\_\_\_

iii. Component \_\_\_\_\_

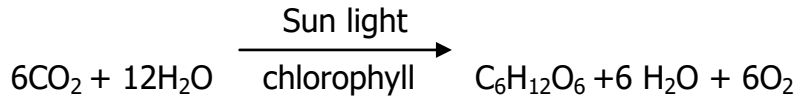
Function \_\_\_\_\_

\_\_\_\_\_

b. Complete the table by filling the blank column.

	<b>Region of human alimentary canal</b>	<b>Protein-digesting enzyme(s)</b>
i.	Stomach	_____
		_____
ii.	Duodenum	_____
iii.	Ileum	_____

6. a. Read the following equation carefully and then answer the questions.



- i. Write the equation in words.

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- ii. Name the process which is represented by the equation above.

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- b. Write an example of the following underground storage organ.

- i. Corm

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- ii. Rhizome

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- c. List two (2) deficiency signs of potassium for plants.

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- d. The other name for blue economy is marine economy. Write three (3) blue economy's priority areas in Zanzibar.

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c. During puberty boys develops secondary sexual characteristics which are different from that of girls. Outline five (5) changes that occur in boys at puberty.

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_

8. Deficiency of some nutrients in diet may lead to certain disorder in the body.

a. Complete the table below by filling correct answer.

<b>Deficiency of nutrient in diet</b>	<b>Disorder</b>
i. Vitamin C	
ii.	Night blindness
iii. Iodine	
iv.	Rickets

b. Differentiates between saprophytism and symbiosis.

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c. List four (4) functions of lipids in the body.

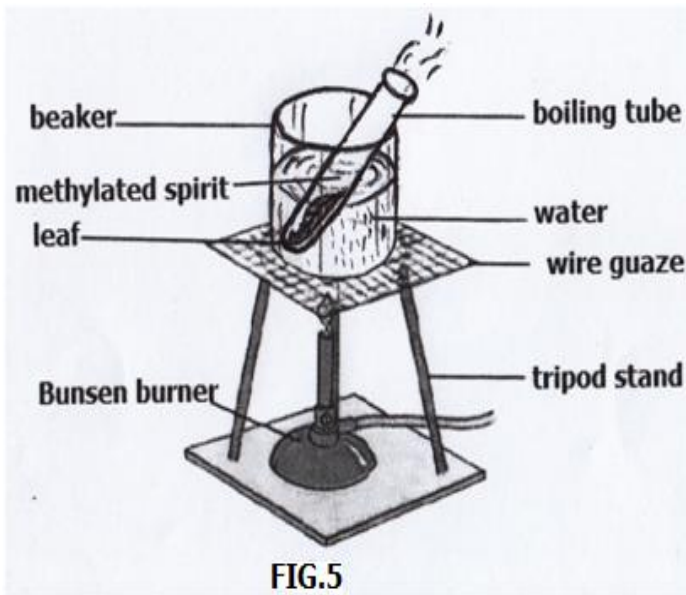
- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_

**SECTION C: (20 Marks)**

**Answer any TWO (2) questions in this section**

**Question NINE (9) is compulsory. Answer either 9a or 9b**

9. a) A certain experiment was conducted and the arrangement of apparatus for the experiment is as shown below.



**The procedure for that experiment were as follows:**

- a. The variegated leaf was removed from a plant after received sunlight for six hours.
- b. The water was boiled in a beaker to boiling point and then turned off the source of heat.

- c. The forceps was used to dip the leaf in hot water for about 30 seconds.
- d. The variegated leaf was removed from a hot water.
- e. The variegated leaf was placed in a boiling tube with methylated sprit then placed in a beaker of boiling water.
- f. The variegated leaf was removed from methylated sprit and then rinsed in to hot water.
- g. The variegated leaf was spread on a white tile and then few drops of iodine solution were added on it.

**Questions.**

- i. Write the aim of this experiment.

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- ii. Why was the leaf dipped in hot water for 30 seconds?

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- iii. Give reason, why the leaf was boiled in methylated sprit?

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- iv. Explain why the leaf was dipped in hot water once again.

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v. Draw and label the diagram of a variegated leaf as it appeared before the experiment.

vi. Draw and label the diagram of a variegated leaf as it appeared at the end of the experiment after iodine was added.

9b. You are given the following basic food substances; meat, rice, peas, castor seeds, bread and margarine.

i. Classify them as protein, lipids or carbohydrates and write them in the table below.

<b>PROTEINS</b>	<b>LIPIDS</b>	<b>CARBOHYDRATES</b>

- ii. Write the colour(s) of the following reagents. The first one is an example.

<b>REAGENTS</b>	<b>COLOUR OF REAGENTS</b>
Sodium hydroxide	Colourless
Iodine solution	
Benedict's solution	
Sudan III solution	
Copper II Sulphate solution	

- iii. Give reason, why dilute hydrochloric acid is added when testing non-reducing sugar?

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- iv. Write the products when glucose molecule and a fructose molecule combine.

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10. a. Define the following terms.

- i. Food preservation

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- ii. Food storage

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b. A fisherman today caught a lot of fish. Briefly explain four (4) methods which will help him to preserve his fish when there is no electricity.

i. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iii. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

iv. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. "KEEP ZANZIBAR CLEAN". This slogan emphasizes on maintaining the cleanliness of surroundings of the community through proper waste disposal. Write an essay on the above slogan using the following guidelines: -

- a. Meaning of waste.
- b. Meaning of waste disposal.
- c. Types of waste.
- d. Five (5) proper ways of reducing waste.

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\_\_\_\_\_



