

Candidate's Examination Number _____

SMZ

044

ZANZIBAR EXAMINATIONS COUNCIL
FORM THREE ENTRANCE EXAMINATION
BIOLOGY

TIME : 2.30 HOURS

THURSDAY, 01 DECEMBER, 2016 AM

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. Use blue or black pen in writing. The diagrams must be in pencil.
5. Write your answers in the space provided.
6. Cellular phones are not allowed in the examination room.

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



This paper consists of 12 printed pages

SECTION A: (30 Marks)**Answer ALL questions in this section**

1. For each of the items (i)-(x), choose the correct answer and write its letter in the box provided below.

- i) A bacterium can be distinguished from an Amoeba in that it possesses
A) Chloroplast B) Cytoplasm C) Cell membrane D) Cell wall
- ii) One of the distinctive features used to place organism in the kingdom fungi is the presence of
A) Cellulose B) Hyphae C) Gill structure D) Capsule
- iii) If the magnifying power of the eye piece lens of the compound microscope is x10, that of the high power objective lens is x40. The magnification is
A) x10 B) x50 C) x400 D) x40
- iv) A chemical substance that catches fire easily is called
A) Toxic B) Corrosive C) Flammable D) Explosive
- v) One of the following sets represents the equation for aerobic respiration
A) $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Energy}$
B) $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Sugar}$
C) $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Acid}$
D) $C_6H_{12}O_6 + 6O_2 \rightarrow 2CH_3CHOH + \text{Energy}$
- vi) The study which deals with the interaction among organisms is
A) Ecosystem B) Ecology C) Abiotic D) Community
- vii) Water and mineral salts in plants are transported in
A) Cell wall B) Phloem C) Guard cell D) Xylem

- viii) Study the following sequence of organisms
 Grass → Grasshopper → Toad → Snake. This is an example of
 Food web B) Food pyramid C) Food chain D) Food producer
- ix) Carbondioxide passes from the blood capillaries into the alveoli by
 A) Diffusion B) Osmosis C) Inspiration D) Oxidation
- x) Lipase enzyme which converts lipids to fatty acids and glycerol is present in
 A) Intestinal juice B) Gastric juice C) Saliva D) Pancreatic juice

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 box below.

List A		List B
i.	Arranging of organisms into groups	A) Hyphae
ii.	Amoeba, Paramecium and Euglena	B) Species
iii.	The field of biology which deals with the grouping and naming of organisms	C) Many celled organisms
iv.	Grouping of organisms according to the observable features	D) Dichotomous
v.	The scientific name of the human being	E) Fimbriae
vi.	It has lesser organisms but more common features	F) Taxonomy
vii.	Placing organisms into two contrasting physical features	G) Pileus
viii.	Bacteria and blue green algae	H) Agronomy
ix.	The cap of the mushroom	I) Artificial classification
x.	The hair like structures attached to the surface of the bacteria	J) Homosapiens
		K) Classification
		L) Phylum
		M) Homo habilis
		N) Natural classification
		O) Protoctista
		P) Monera

Put the answers in the box

LIST A	i	ii	iii	iv	v	vi	vii	viii	ix	x
LIST B										

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

- a) A person who studies biology is known as _____.
- b) Small organisms like virus and bacteria are commonly known as _____.
- c) Small organisms are enlarged and examined easily by _____.
- d) The box that contains items used to give help during emergency is called _____.
- e) Mimosa plant shows a characteristic of living things is known as _____.
- f) To get rid of harmful products from the body is by the process of _____.
- g) The simplest one-celled living things such as Amoeba are called _____ organisms.
- h) The complex living organisms made up of many cells are called _____ organisms.
- i) Helping the victim of electric shock is to move away the victim by using _____ object.
- j) People who are _____ to insect bites and stings can develop serious reactions.

SECTION B: (50 Marks)

Answer ALL questions

4. a) Define a cell.

b) List four (4) cell structures that are similar in plants and animals.

c) Identify two (2) cell structures that are only found in plant cell.

- d) Point out three (3) structures which when present in a cell, a cell is said to be a true cell.

i _____ ii _____ iii _____

5. a) Complete the table by selecting the correct choice below

Vitamin	Deficiency
A	
B ₁	
C	
D	
K	

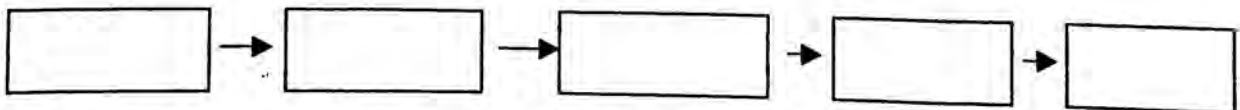
Rickets, Beriberi, Night blindness, Scurvy, Bleeding

- b) Name one type of food in each vitamin

Vitamin	Type of food
A	
B ₁	
C	
D	
K	

6. a) Arrange the following components of the gaseous exchange system in a correct order in the boxes below.

trachea, bronchioles, alveoli, nasal cavity, bronchioles, bronchus



- b) List any three (3) characteristics of the respiratory surface.

i) _____
 ii) _____
 iii) _____

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c) Explain two (2) importance of breathing through the nose.

i) _____

ii) _____

7. a) Name the five (5) kingdoms of living organisms

i) _____ ii) _____

iii) _____ iv) _____

v) _____

b) Study the figure named K below, and then answer the questions



i) The common name of K is _____.

ii) K belongs to a division of _____.

iii) The two distinct phases of life cycle of K are _____ and _____.

iv) The habitat of K is _____.

v) One advantage of K is _____.

vi) One disadvantage of K is _____.

8. a) Draw the internal structure of the mammalian heart.

b) On the structure drawn label the following:

- i) A blood vessel that carries blood to the lungs.
- ii) A structure that divides the heart into two equal parts.
- iii) Structures that prevent back flow of blood.
- iv) A blood vessel that carries blood from the body.

c) Name the four chambers of the heart

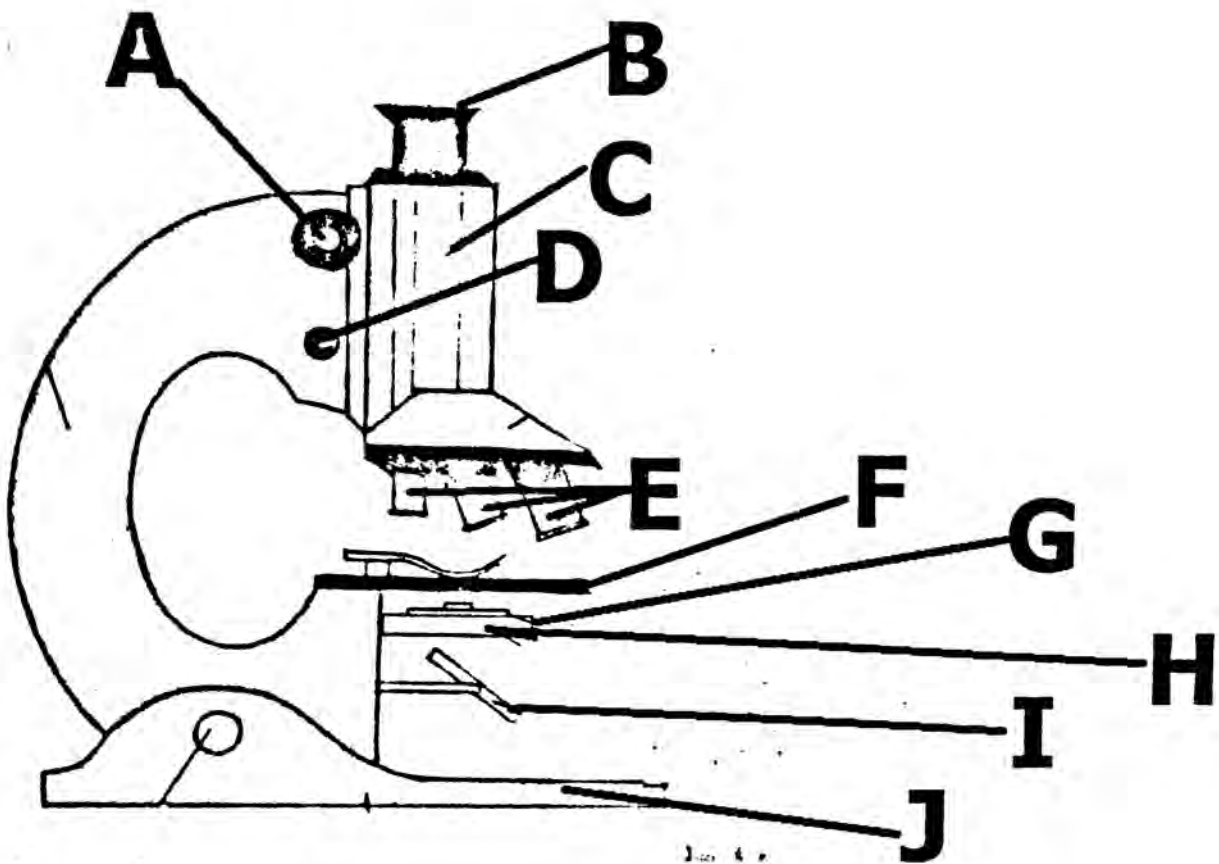
- i) _____ ii) _____
- iii) _____ iv) _____

SECTION C: (20 Marks)

Answer any TWO (2) questions

Question 9 is COMPULSORY, answer 9a OR b and any one (1) question.

9. a) Study the figure Q below then answer the questions that follows:
i) Label the parts shown by the letters A-J



- | | |
|---------|---------|
| A _____ | B _____ |
| C _____ | D _____ |
| E _____ | F _____ |
| G _____ | H _____ |
| I _____ | J _____ |

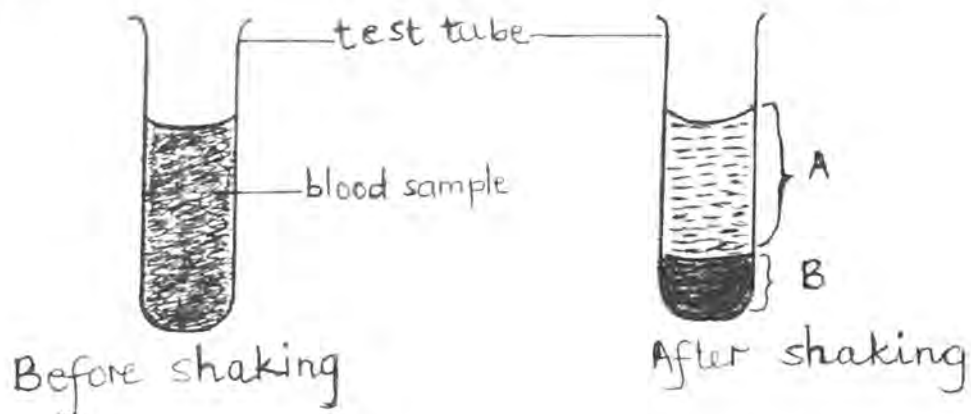
- ii) You are given: The eye piece magnification of the specimen is 15.
The objective lens magnification is 50.

Use the data to solve for the total magnification of the specimen.

- iii) You are given: The magnification of the object is 1.5.
The size of the drawing is 6 cm.

Use the data to solve for the size of the object

- b) In an experiment to find the composition of blood, 10cm^3 of fresh blood from human being was taken and shaken very much. The results were as shown below.



- i) Label part A _____
- ii) Label part B _____
- iii) Identify four (4) substances present in A _____

- iv) Identify three (3) substances present in B _____

- v) State one (1) function of each substance present in B _____

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Substance (i) _____

Substance (ii) _____

Substance (iii) _____

vi) The colour that may appear in part A is _____.

vii) The colour that may appear in part B is _____.

viii) One function of part A is _____.

10. a) Mention any two non-communicable disease

b) Bilharzia (Schistosomiasis) has been affecting many people specifically in the rural areas where there are streams of water. Write a short essay about it using the following sub-headings:

i) Causes of the diseases

ii) Signs of the diseases

iii) Effects of the diseases

iv) Preventive measures that can be taken

11. a) Briefly explain four (4) modern methods of food preservation, processing and storage.

b) Outline advantages and dis-advantages of modern methods of food processing, preservation and storage.

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Lined area for writing answers, consisting of approximately 30 horizontal lines.

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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.