

Candidate's No.

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION AND VOCATIONAL TRAINING
FORM TWO SECONDARY EDUCATION EXAMINATION, 2007

0033

BIOLOGY

TIME: 2½ HOURS

INSTRUCTIONS

1. This paper consists of three sections A, B and C.
2. Answer ALL questions from sections A and B and ONE question from section C.
3. ALL answers must be written in the spaces provided.
4. Write your Examination number on the top right-hand corner of every page.
5. ALL writing must be in blue/black ink. Diagrams must be drawn in pencil and labeled in ink.
6. Cellphones are not allowed in the examination room.

FOR EXAMINER'S USE ONLY		
QUESTION NUMBER	SCORE	INITIALS OF EXAMINER
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		

This paper consists of 12 printed pages.

SECTION A (30 MARKS)

Answer ALL questions from this section. Each question carries 10 marks.

1. Questions (i) - (x) are multiple choice items. Select the best answer in each item and write its letter in the box provided.

(i) An object to be observed under the microscope is placed on the:

- A. stage
- B. mirror
- C. eye piece
- D. objective lens
- E. adjusting knob

(ii) Which of the following is the fundamental unit of life?

- A. Tissue
- B. Kidney
- C. Heart
- D. Cell
- E. Organ

(iii) The best evidence that two populations belong to the same species is:

- A. they look alike
- B. they interbreed and produce infertile offspring
- C. they are made up of cells
- D. they live in the same habitat
- E. they interbreed and produce fertile offspring

(iv) A leaf is decolourised by boiling in ethanol before testing it for starch because:

- A. it makes starch more reactive
- B. it prevents masking of the colour change
- C. the starch grains show up more easily
- D. it breaks down other sugars
- E. it is very soft

(v) A secretion containing enzymes which digest protein and carbohydrates is:

- A. bile
- B. gastric juice
- C. pancreatic juice
- D. saliva
- E. hydrochloric acid

(vi) Which of the following blood vessels contains blood rich in dissolved food substances?

- A. Hepatic portal vein
- B. Aorta
- C. Vena cava
- D. Pulmonary vein
- E. Pulmonary artery

(vii) Muscle fatigue in the body is caused by a lack of:

- A. carbon dioxide
- B. pyruvic acid
- C. oxygen
- D. lactic acid
- E. uric acid

(viii) The most essential function of respiration in living organisms is:

- A. breathing in and out
- B. the liberation of energy for work
- C. the removal of nitrogenous wastes
- D. the liberation of carbon dioxide and water
- E. taking in oxygen and giving out carbon dioxide

(ix) The following organisms belong to the Kingdom Fungi.

- A. Ameoba, Spirogyra, Yeast
- B. Mucor, Mushroom, Algae
- C. Mucor, Yeast, Moss
- D. Yeast, Mushroom, Penicillium
- E. Yeast, Paramecium, Euglena

(x) Which component of the blood is responsible for transporting oxygen?

- A. Fibrinogen
- B. Neutrophil
- C. Albumin
- D. Hormone
- E. Hemoglobin

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2. The following statements are either TRUE or FALSE. In the spaces provided write TRUE if the statement is correct and FALSE if the statement is not correct.

- (i) Fungi are multi-cellular organisms, which contain chlorophyll.
- (ii) Inhaled air contains higher volume of carbon dioxide than exhaled air.
- (iii) Locomotion is a characteristic of all higher organisms.
- (iv) All living things are made up of cells.
- (v) Mitochondrion is a part of the cell where respiration takes place.
- (vi) Anaerobic respiration occurs in the absence of oxygen.
- (vii) Spirogyra and algae belong to Kingdom Plantae
- (viii) Artificial classification is based on a few observable characteristics.
- (ix) People living with HIV/AIDS should be isolated.
- (x) All veins do not carry oxygenated blood.

3. The following are matching items. Match the phrase or term in List A with that in List B by writing its letter in the space provided in the table at the end of the question.

LIST A	LIST B
(i) The material inside the nucleus. (ii) Air sacs for gaseous exchange in mammals. (iii) Physical, mental and emotional well being. (iv) Increase surface area for absorption of digested food substance. (v) A substance produced by the body to attack invading pathogens. (vi) Contains green pigments in plants. (vii) Prevents blood from flowing back into the heart. (viii) Loss of water vapour from plants. (ix) Single celled organism. (x) Product of photosynthesis.	A. Villi B. Root hair C. Oxygen D. Carbon Dioxide E. Transpiration F. Translocation G. Amoeba H. Mushroom I. Tricuspid valve J. Semi-lunar valve K. Chloroplast L. Mitochondrion M. Antigen N. Antibody O. Health P. Exercise Q. Nucleoplasm R. Cytoplasm S. Alveoli T. Trachea

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)

SECTION B (50 MARKS)

This section consists of five short answer questions. You are required to answer ALL questions from this section. Read the questions carefully before writing the answers in the spaces provided. Each question carries 10 marks.

4. Study the following diagram below and answer the questions that follow.

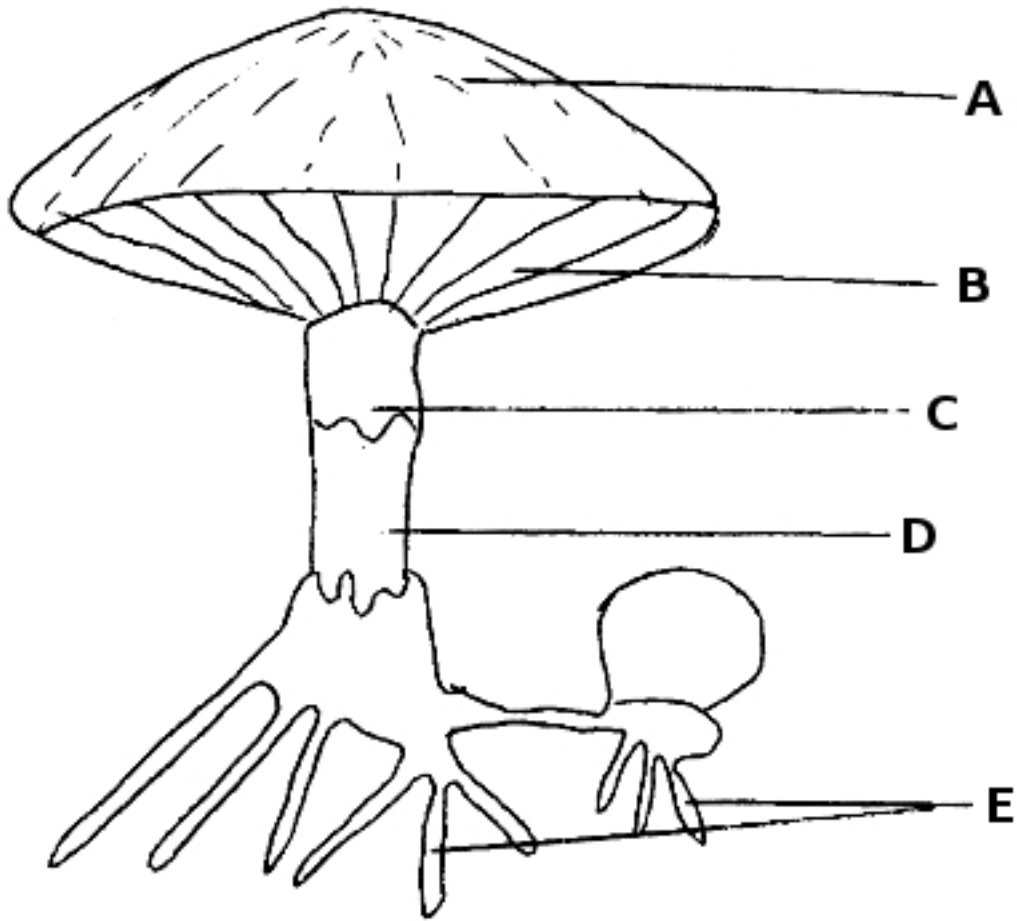


Figure 1

(a) What is the name of the organism in Figure 1?

.....

(b) Identify structures labeled A – E.

A.

D.

B.

E.

C.

(c) List four advantages of the Kingdom into which the organism in Figure 1 belongs.

- (i)
- (ii)
- (iii)
- (iv)

5. (a) What is breathing?

.....
.....

(b) Name the structures used for gaseous exchange in the following organisms.

- (i) Fish
- (ii) Cat
- (iii) Grasshopper
- (iv) Green Plants
- (v) Spider

6. (a) Draw and label the Transverse Section (T.S) of a dicotyledonous root.

(b) Define the following terms:

(i) Ecosystem

.....
.....

(ii) Habitat

.....
.....

(iii) Biotic Factors

.....
.....

7. (a) What do you understand by the term biological classification?

.....
.....

(b) Distinguish between natural and artificial classification.

	Natural Classification	Artificial Classification
(i)
(ii)
(iii)
(iv)

(c) Complete the following table

ORGANISM	KINGDOM	PHYLUM/DIVISION
Man		
Maize		
Yeast		
Amoeba		
Fern		

8. (a) Explain the meaning of the term "good manners"

.....
.....

(b) Outline five principles of personal hygiene and good manners

- (i)
- (ii)
- (iii)
- (iv)
- (v)

(c) Define the term immunity.

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.....
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