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THE UNITED REPUBLIC OF TANZANIA MINISTRY OF EDUCATION AND CULTURE

FORM TWO SECONDARY EDUCATION EXAMINATIONS, 2005

0033 BIOLOGY

TIME: 2 HOURS.

INSTRUCTIONS

- 1. This paper consists of sections A, B and C.
- 2. Answer ALL questions from sections A and B and ONE question from section C.
- 3. All answers for sections A and B must be written in the space provided for each question.

 Answers for section C should be written in the paper provided.
- 4. Write your examination number on the top right hand corner of every page.
- 5. All writing must be in blue/black ink or ball point pens.
- 6. Cell phones 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 11 printed pages

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SECTION A

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

		ions (i) - (x) are multiple choice items. Select the best answer in each case and er in the box provided.	l write
(i)	Wh	ich of the following organelles is involved in respiration?	
	A B C D E	Cell membrane. Nucleus. Chloroplast. Mitochondrion. Lysosome.	
(ii)	One	e of the following is not a part of a microscope;	
	A B C D E	Stage. Eye piece. Coarse adjustment knob. Light. Mirror.	
(iii)	Gas	seous exchange in human lungs occurs in the;	
	A B C D E	Alveoli. Mouth Nose. Bronchioles Trachea	
(iv)	Wh	ich of the following parts transports water within a plant?	
	A B C D E	Phloem. Xylem. Cambium. Epidermis. Pith.	
(v)	The	following group of organisms belong to the same kingdom;	
	A B C D E	Bat, Whale, Amoeba. Euglena, Yeast, Liverwort. Grasshopper, Bat, Fish. Amoeba, Housefly, Mosquito. Paramecium, Bat, Moss.	

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(vi)	HIV	/AIDS can result from the following behaviour.	
	A B C D E	Abstaining from sex and use of condoms. Rape, alcoholism and drug abuse. Faithfulness in marriage. Avoiding multiple sexual partnership. Using contraceptive pills.	
(vii)		ood sample X turned blue-black when iodine solution was added on to it. conclusion is that sample X contained: Non reducing sugar. Reducing sugar. Starch. Protein. Lipid.	
(viii)	A pa	atient having blood group B can receive blood of a donor with blood group;	
	A B C D E	B only. AB only. O only. B or AB. B or O.	
(ix)	Whi	ich of the following does not secrete digestive enzymes?	
	A B C D E	Oesophagus. Pancreas. Stomach. Salivary glands. Ileum.	
(x)	The	body is protected against pathogens by:	
	A B C D E	Bone marrow. Erythrocytes. Thrombocytes. Lymph. Leucocytes.	

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2.		llowing statements are either TRUE or tement is true and FALSE if the statem		· ·	
	Living	organisms are made up of cells T	RUE		
	(i)	Blood groups are arranged on the bas plasma and anti-bodies	sis of p	presence or absence of	
	(ii)	Fungi have chloroplasts but lack DNA			
	(iii)	The valve separating the right auricle tricuspid valve.	and ri	ight ventricle is called	
	(iv)	All types of bacteria cause diseases in	hum	an beings.	
	(v)	Salting and freezing are some of the r	netho	ds of food preservation.	
	(vi)	Synovial fluid reduces friction between	n joints	S.	
	(vii)	Root hairs increase the surface area	of plan	nt roots for water absorption	1
	(viii)	The nucleus is the basic unit of life.			
	(ix)	The ileum is the first part of the small	intesti	ine.	
	(x)	Inhaled air has high content of oxyger	١.		
3.	writing	llowing are matching items. Match the parts letter against appropriate position in worked example (x).			•
	List A		Lis	st B	
	<u>Y</u> P	resent in all plant cells	X Y	cell membrane cell wall	
	List A				
	(i)	Product of anaerobic re-	spirati	ion in plants.	
	(ii)	Turgor pressure.			
	(iii)	Carries oxygenated block	od fror	m lungs to the heart.	
	(iv)	Joints between the bone	es of c	cranium.	
	(v)	Removal of undigested	mater	rials from the human body.	
	(vi)	A group of organisms w	hich c	can interbreed and produce	fertile offspring
	(vii)	The process of releasing	g enei	rgy in the presence of oxyg	en.
	(viii)	The liquid part of blood.			

(ix) End products of digestion of fats and oil.

(x) Control the closing and opening of the stomatal pore.

List B

- A. Fatty acids and glycerol
- B. Fatty acids and glycerine
- C. Moveable joints
- D. Immoveable joints
- E. Species
- F. Genus
- G. Lactic Acid
- H. Ethanol
- I. Corpuscles
- J. Plasma
- K. Epidermal cells
- L. Guard cells
- M. Pulmonary artery
- N. Pulmonary vein
- O. Ingestion
- P. Egestion
- Q. Aerobic respiration
- R. Anaerobic respiration
- S. Force exerted against a cell wall
- T. Pressure due to flaccidity

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SECTION B

This section consists of five (05) 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. (a) Outline four (04) differences between plant cells and animal cells.

PLANT CELLS	ANIMAL CELLS
(i)	(i)
(ii)	(ii)
(iii)	(iii)
(iv)	(iv)

(b)	What	is First Aid?
(c)	List fo	our (04) components of a First Aid Kit.
. ,	(i)	
	(ii)	
	(iii)	
	(iv)	

	(d)	Briefly outline three methods of providing First Aid to victims of fainting.
		(i)
		(ii)
		(iii)
		(III)
5.	(a)	Differentiate between the following:
	,	(i) Osmosis and Diffusion
		(i) Osmosis and Diliusion
		(ii) Gaseous exchange and respiration
	(b)	Draw a well labelled diagram of a generalized plant cell as seen under a light microscope.

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- 6. If the body does not get enough of any of the food substances, certain disorders occur. Such disorders are generally called deficiency diseases.
 - (a) Complete the table below;

Food substance lacking in diet	Deficiency diseases
Calcium	(i)
(ii)	Night blindness
Vitamin B₁	(iii)
lodine	(iv)
Iron	(v)
(vi)	Pellagra
Vitamin D	(vii)

- (b) Name three (3) elements which for carbohydrates.
 - (i)
 - (ii)
 - (iii)

7. Study figure X below carefully and answer the questions that follow.

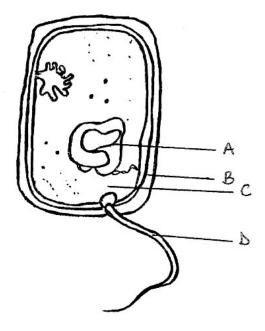


Figure X

(a)	(i)	What is the name of an organism in Figure X above?
	(ii)	In which kingdom does the organism in Figure X belong?
	()	
(b)	lde	ntify structures labelled A – D.
		Α
		В
		C
		D

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Li	st any four (4) economic importance o	of the organism in Figure X.	
(i)			
(ii)		
/ii			
(II	i)		
(iv	/)		
(.,		
A biolo of lacti	ogist collected blood samples from an ic acid accumulation. The following we	athlete at intervals to determine the amousere the results obtained.	
	TIME IN MINUTES	CONCENTRATION OF LACTIC ACID (Mg/100cm³)	
	0	3	
	4	28	
	8	50	
	12	40	
	16	33	
	20	26	
	40	8	
	60 Tah	le 1	
Study	Table 1 above and answer the following	ng questions.	
(i) N	ame the process which leads to the ac	e the process which leads to the accumulation of lactic acid.	
(ii) In	which animal tissue is lactic acid form	ned?	

8.

(iii) What are the effects of accumulation of lactic acid in the body?

(iv)	From the results shown in Table 1 above, which range of time represents the period of recovery?
(v)	Write a word equation for anaerobic fermentation in plants.

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SECTION C

This section consists of two guided essay questions. You are required to answer only ONE question. Each question carries 20 marks.

- 9. Write an essay on food preservation using the following guidelines.
 - Definition of food preservation
 - Methods used in food preservation
 - Examples of food preserved in each method.
- 10. Write an essay on gonorrhea using the following guidelines.
 - Causative agent.
 - Ways of transmission
 - Symptoms
 - Parts of the body affected
 - Cure and preventative measures