

## BIOLOGY FORM THREE ENTRANCE EXAM ZANZIBAR 2014

Solutions from: [Maktaba by TETEA](https://maktaba.tetea.org)

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1.

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

2.

i	ii	iii	iv	v	vi	vii	viii	ix	x
5	7	14	8	3	4		10	13	16

3.

i	ii	iii	iv	v	vi	vii	viii	ix	x
False	False	False	False	False	True	True	True	False	False

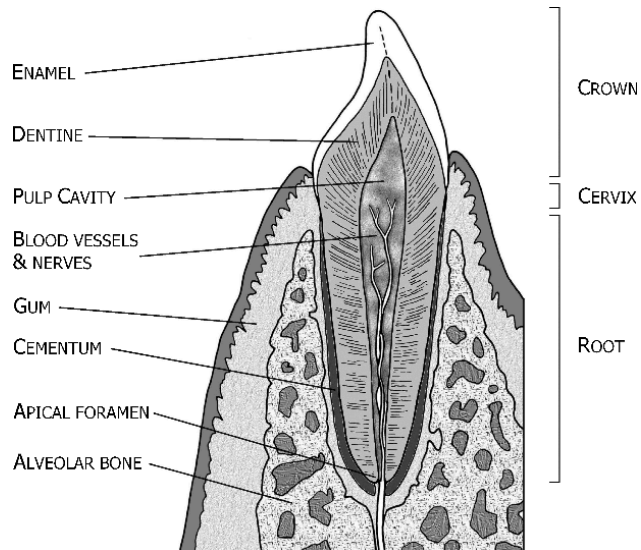
4.(a)Dentition is the makeup of a set of teeth including their kind, number, and arrangement.

(b)dental formula of human




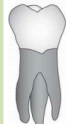
I 2/2 C 1/1 P 2/2 M 3/3

Where,I = Incisor, C = Canine, P = Premolar, M = Molar

(c) AN INCISSOR TEETH.



(d)molar teeth is used for chewing and grinding hard teeth.

Types of human teeth				
	Incisor	Canine	Premolar	Molar
				
Position in mouth	Front	Either side of incisors	Behind canine	Back
Description	Chisel-shaped (sharp edge)	Slightly more pointed than incisors	2 points (cusps), 1 or 2 roots	4 or 5 cusps 2 or 3 roots
Function	Biting of pieces of food	Similar function to incisors	Tearing and grinding food	Chewing and grinding food

(e)dental diseases

- gum diseases (periodontitis)
- tooth decay.

5(a)Storage organs

- cassava-Roots

-Irish potato-stem tubers.

-Onion-bulbs

(b)



### Importance of photosynthesis

- During photosynthesis, carbohydrates formed can be converted to fats, protein and other organic compounds → food for animals
- Allows animals who feed on plants to obtain energy as photosynthesis converts energy from the sun to chemical energy
- Fossil fuels are a store of energy derived from sunlight through photosynthesis
- Maintains O<sub>2</sub> and CO<sub>2</sub> balance in atmosphere

(c)(i)-A is oxygen

-B is leaves

-C is Funnel.

(ii)gas A is tested by supporting combustion of a glowing split.

(iii)the photosynthesis of leaves.

(iv)conditions for photosynthesis include

-carbondioxide

-sunlight

-chlorophyll.

6.(a)First aid kit is a small box used to keep instrument used for giving first aid.

(b)(i) components and uses

-gloves used to protect hands

-pair of scissors used to cut dress materials like bandage

-cotton wool used to clean the wound

(ii) covering hands helps to prevent the direct contact to the other body fluids which could cause infection

(c) once a child swallow kerosene is supposed to be given plenty of water or milk in order to neutralise the poison from kerosene.

7.(a) Immunity is the ability of the body to resist diseases.

(b) STDs Sexually Transmitted Diseases

STIs. Sexually Transmitted Infections

HIV. Human Immunodeficiency Virus

AIDs Acquired Immune-Deficiency Syndrome.

(c)

## The Impacts of HIV/AIDS on People and Societies

- In all of our countries, HIV/AIDS is
  - ❖ Reversing decades of health, economic and social progress
  - ❖ Reducing life expectancy
  - ❖ Slowing economic growth
  - ❖ Deepening poverty
  - ❖ Contributing to and exacerbating food shortages
  - ❖ Creating a growing human capacity crisis
  - ❖ Enhancing gender inequities by affecting women and girls more than men and boys

(d) A -abstain from sexual intercourse.

B-be faithful to only one sexual partner

C- use CONDOM

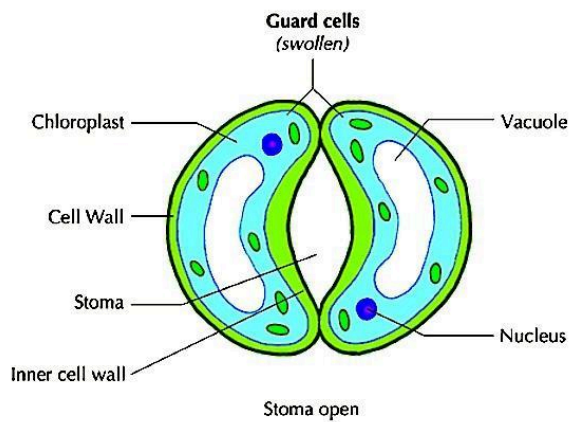
8.(a) Transpiration is the process by which plants lose water.

(b)(i) stomatal Transpiration is when a plant loses water through stomata.











(ii) cuticular Transpiration is when a plant loses water through cuticles.

(iii) Lenticular Transpiration is when a plant loses water through lenticles.

(c)



(d)

Comparison of Monocots and Dicots					
	Monocots		Dicots		
Seeds	Single cotyledon		Two cotyledons		
Leaves	Parallel veins		Branched veins		
Flowers	Floral parts often in multiples of 3		Floral parts often in multiples of 4 or 5		
Stems	Vascular bundles scattered throughout stem		Vascular bundles arranged in a ring		
Roots	Fibrous roots		Taproot		

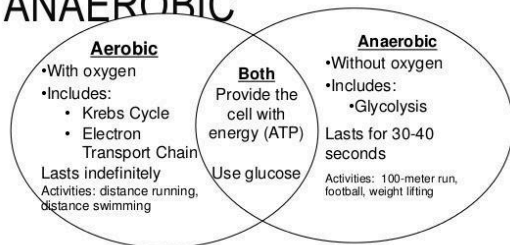
9.(a) Respiration is the process of breaking down food in presence of oxygen to give out energy.

(b)(i)

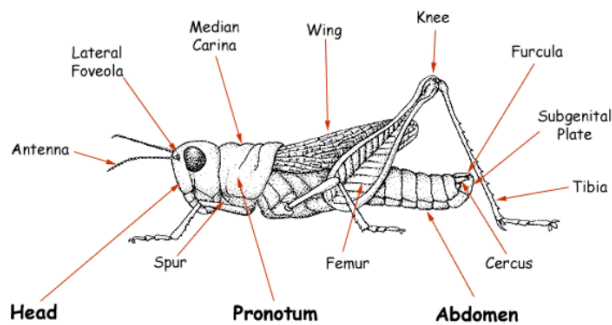
Breathing	Respiration
Breathing is a continuous process that involves both inhalation and exhalation.	The process in which food is broken down in the cells to release energy is known as respiration.
It is a physical process.	It is a biochemical process.
Breathing is a part of respiration.	It involves the release of energy.

(ii)

## AEROBIC VS. ANAEROBIC

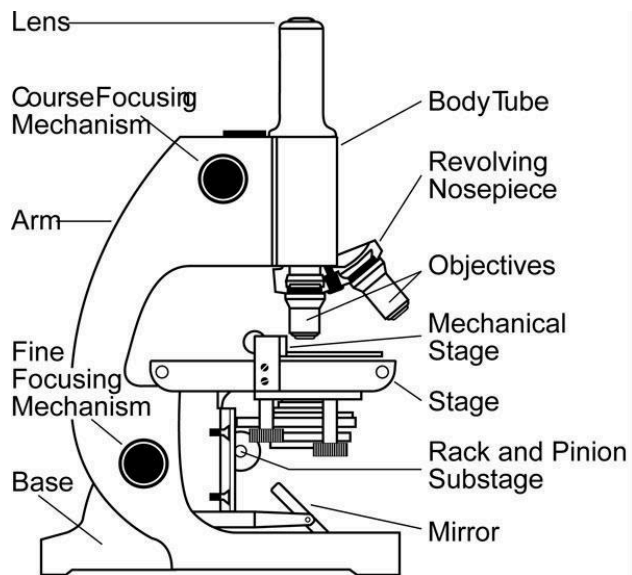


(c)

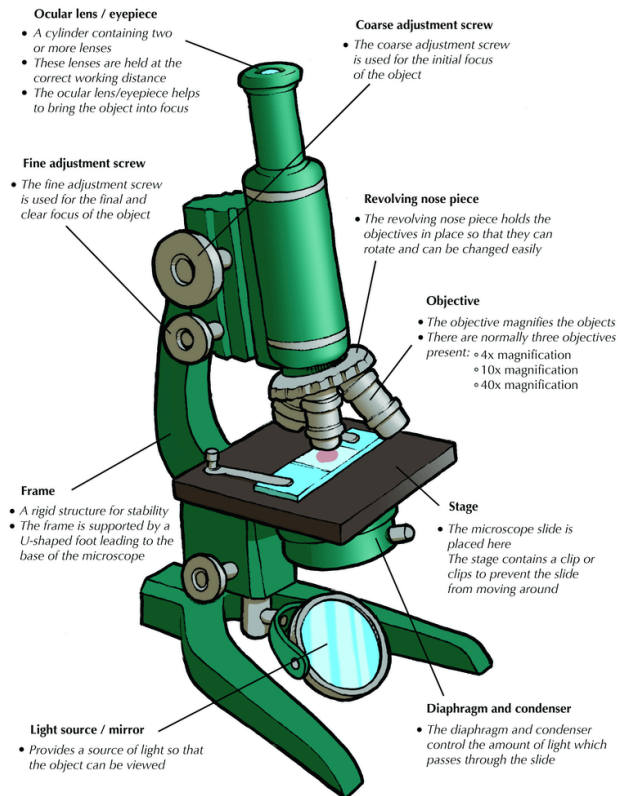


(d) the lable part responsible for respiration is C.

10. (a) MICROSCOPE



(b)



(c) total magnification = eyepiece magn x objective magnification.

Objective power = magnification ÷ eyepiece

$$= 400 / 10$$

Magnification power of the objective lens is 40.

11.(a) Digestion is the process of breaking down food materials into small pieces

(b) A cardiac sphincter muscles

B stomach

C pyloric sphincter.

(c)



## Enzymes present in intestinal juice

- The walls of the small intestine secrete digestive enzymes to digest food.
- Peptidases to split small peptides into amino acids.
- **Maltase** acts on maltose and converts it into glucose.
- Sucrase acts on sucrose and converts it into glucose and fructose.
- **Lactase** acts on lactose and converts it into glucose and galactose.
- **Lipases** acts on lipids and convert it into fatty acid and glycerol.

11.(a) blood vessels are

-arteries

-veins

-capillaries.

(b)

ARTERIES VERSUS VEINS	
Arteries	Veins
1. Carry blood from the heart, carry oxygenated blood (except pulmonary artery)	1. Carry blood to the heart, carry deoxygenated blood (except pulmonary vein)
2. Normally bright red in color	2. Normally dark red in color
3. Elastic walls that expand with surge of blood	3. Thin walls/less elastic
4. No valves	4. Valves
5. Can feel a pulse	5. No pulse

From Heart      To Heart

Artery      Arteriole      Capillaries      Venule      Vein

(c)(i)

Single circulation	Double circulation
1) Blood flows through heart only once for completing one circulation. It is called single circulation. <b>Eg : Fishes</b>	1) If the blood flows through heart two times for completion of one circulation. It is called double circulation. <b>Eg : Mammals, birds.</b>
2) Pulmonary circulation is absent.	2) Pulmonary circulation is present.
3) Heart consists of two chambers.	3) Heart consists of three or four chambers.
4) Single circulation is seen in fishes.	4) Double circulation occurs in frogs, reptiles, birds and mammals.

(ii)

## PULMONARY CIRCULATION

VERSUS

## SYSTEMIC CIRCULATION

Pulmonary circulation carries deoxygenated blood from the right ventricle of the heart to the lungs through the pulmonary artery

Carries oxygenated blood from the lungs to the left atrium of the heart by the pulmonary vein

Composed of pulmonary artery and pulmonary vein

Carries blood to the lungs

Helps to release carbon dioxide from the blood while dissolving oxygen in the blood

Systemic circulation carries oxygenated blood from the left ventricle of the heart to the rest of the body by the aorta

Carries deoxygenated blood from the body to the right atrium of the heart by the superior and inferior vena cava

Composed of inferior and superior vena cava, aorta, and other small blood vessels

Carries blood throughout the body

Helps to provide nutrients and oxygen to the metabolizing cells in the body

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