

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM ONE ENTRANCE EXAMINATION

129

SCIENCE

TIME: 2.00 HOURS

ANSWERS TUESDAY 27ST NOVEMBER, 2018 A.M

INSTRUCTIONS TO CANDIDATES

1. This paper consists of sections A, B and C.
2. Answer ALL questions in section A and B. Choose THREE (3) question in section C.
3. Write your examination number on each page.
4. Write all answers in the space provided.
5. Use a blue or black pen in writing. 6. Cellular phones and unauthorized materials are not allowed in the examination room.

FOR EXAMINER'S USE ONLY

QUESTION NUMBER	MARKS	SIGNATURE
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JUMLA		



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SECTION A:

1. Choose the correct answer from the given alternatives and write its letter in the table below.

i. Machine is anything that

A. Complicates work B. Simplifies work C. Has energy D. Moves

The correct answer is **B: Simplifies work**. A machine is designed to make tasks easier by reducing human effort or increasing efficiency. Machines do not necessarily have energy themselves, but they make use of energy to perform work.

ii. Material that transmits heat easily is called

A. Conductor B. Insulator C. Rubber D. Plastic

The correct answer is **A: Conductor**. Conductors, such as metals, allow heat to pass through them efficiently. Insulators, rubber, and plastic resist the flow of heat.

iii. Carnivorous animals have

A. Strong incisors B. Long Molars C. Strong canines D. Long beak

The correct answer is **C: Strong canines**. Carnivores require strong canine teeth to tear flesh. Strong incisors are for biting, long molars are for grinding plant material, and long beaks are for birds.

iv. Organic substances that are added to the soil to provide plant nutrients

A. Manure B. Mulching C. Fertilizers D. Salt

The correct answer is **C: Fertilizers**. Fertilizers supply essential nutrients like nitrogen, phosphorus, and potassium, enhancing plant growth. Manure is also organic but generally less concentrated than commercial fertilizers.

v. Red blood cells are also called

A. Plasma B. Leucocytes C. Thrombocytes D. Erythrocytes

The correct answer is **D: Erythrocytes**. Erythrocytes are responsible for carrying oxygen from the lungs to tissues. Plasma is the liquid component, leucocytes are white blood cells, and thrombocytes are platelets.

vi. The process of counselling service provided before and after HIV and AIDS testing

A. Stigmatization B. Voluntary counselling C. Involuntary counselling D. Involuntary testing

The correct answer is **B: Voluntary counselling**. Voluntary counselling involves supporting individuals with information, guidance, and emotional support before and after HIV testing.

vii. Matter is anything which has

A. Weight and occupy space B. Weight only C. Mass only D. Weight and length

The correct answer is **A: Weight and occupy space**. Matter is defined as anything that has mass and occupies space. Weight is a measure of gravitational pull on matter.

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viii. Example of airborne disease

A. Cholera B. HIV/AIDS C. Tuberculosis D. Typhoid

The correct answer is **C: Tuberculosis**. Tuberculosis spreads through the air via droplets from coughs or sneezes. Cholera and typhoid are waterborne, while HIV/AIDS is transmitted through body fluids.

ix. The vertebral column is also known as

A. Spinal cord B. The Brain C. The skull D. Backbone

The correct answer is **D: Backbone**. The vertebral column, or backbone, protects the spinal cord and provides structural support.

x. Pawpaw is an example of

A. Dry fruit B. Fleshy fruit C. Seed fruit D. Dry seed fruit

The correct answer is **B: Fleshy fruit**. Pawpaw has soft edible flesh around its seeds, which is a characteristic of fleshy fruits.

2. Match the sentences in LIST A with a correct response from LIST B.

i. The most dangerous disease that has no cure or vaccination – **J: HIV/AIDS**. HIV/AIDS is incurable and has no vaccine, making it highly dangerous.

ii. The main aim of rendering First Aid – **E: To save life of the victim**. First aid provides immediate assistance to prevent further injury or death.

iii. The function of the eye – **M: Seeing or vision**. Eyes are sensory organs responsible for vision.

iv. Aquatic animals – **K: Live in water**. Aquatic animals, such as fish, live and adapt to water environments.

v. The main source of energy on the Earth – **C: Sun**. The sun provides light and heat energy essential for life.

vi. Direct current generator – **O: Dynamo**. A dynamo generates direct current electricity.

vii. Activity that lead to soil degradation – **A: Release of toxic waste**. Toxic waste contaminates soil, reducing fertility.

viii. Group of rays – **F: Beam**. A beam is a collection of rays traveling in the same direction.

ix. The main hazard of heat on the Earth – **B: Rise in temperature**. Excessive heat can cause droughts and heat waves.

x. Respiratory organ of fish – **L: Gills**. Fish extract oxygen from water through gills.

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3. For each statement write T if the sentence is TRUE and F if the sentence is FALSE.

- i. The direction to which the compass needle points is magnetic north – **T**. Magnetic compasses align with Earth's magnetic north.
- ii. The brain is the powerful muscular organ that pumps the blood – **F**. The heart pumps blood; the brain controls body functions.
- iii. The long form of HEP is Hydro-Electric Power – **T**. HEP stands for Hydro-Electric Power, generated using water flow.
- iv. Meat, fish, eggs and milk are foods that have protein – **T**. These are rich protein sources necessary for growth and repair.
- v. Pollination is the transfer of pollen grains from stigma to anther – **F**. Pollination is from anther to stigma, not the reverse.
- vi. Diabetic is caused by lack of enough carbohydrates – **F**. Diabetes is related to insulin deficiency or resistance, not carbohydrate intake.
- vii. The largest organ in a human body is the skin – **T**. Skin covers the entire body and serves multiple functions.
- viii. The process by which the seed changes into fruit is germination – **F**. Germination is the growth of a seed into a seedling; fruit formation occurs after fertilization.
- ix. A solvent is a substance that can dissolve solute – **T**. Solvents dissolve solutes to form a solution.
- x. The voltmeter is used to measure current – **F**. Voltmeter measures voltage; ammeter measures current.

SECTION B:

4. Choose the correct answers from the box below and fill in the blanks.

- a) Water is a **liquid** that covers about seventy percent of the earth's surface. It exists in oceans, rivers, and lakes.
- b) The spinal cord is the extension of the **brain**. It transmits messages between the brain and the rest of the body.
- c) Testes are enclosed by tough tissue called **scrotum**. This protects and regulates their temperature for sperm production.
- d) The process by which plants make their own food is **photosynthesis**. It uses sunlight, carbon dioxide, and water to produce glucose and oxygen.
- e) The act of a body to fall down the bottom of a fluid is **sinking**. Objects denser than the fluid sink.

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f) The current flows in a pathway called **electric circuit**. It allows electricity to move from source to load.

g) Part of the ear that collects and directs sound waves onto the eardrum is **pinna**.

h) A magnet is a piece of metal made up of **iron**. Iron is naturally magnetic and attracts certain metals.

i) Lack of iodine minerals in the diet leads to **goitre**. Iodine deficiency causes thyroid gland enlargement.

j) The human tongue is a special organ for **tasting**. It helps perceive different flavors and sensations.

5. a) Define the following terms

i) Sense organ

A sense organ is **a part of the body that detects stimuli from the environment and sends signals to the brain**. Examples include eyes for vision, ears for hearing, and tongue for taste.

ii) Respiratory system

The respiratory system is **a group of organs responsible for breathing, including the nose, trachea, lungs, and diaphragm, facilitating oxygen intake and carbon dioxide removal**.

b) Write down four (4) functions of the skin

i) **Protection** – shields internal organs from injury and harmful microorganisms.

ii) **Temperature regulation** – through sweat and blood vessel dilation or constriction.

iii) **Sensation** – contains receptors for touch, pain, temperature, and pressure.

iv) **Excretion** – removes waste products such as salts and water through sweat.

6. a) Define electricity

Electricity is **the flow of electric charge through a conductor, used as a source of energy for lighting, heating, and powering machines**.

b) List down two (2) types of circuits

i) **Series circuit** – current flows in a single path.

ii) **Parallel circuit** – current splits and flows through multiple paths.

c) Draw the following electrical symbols

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- i) Voltmeter – a circle with a "V" inside
- ii) Ammeter – a circle with an "A" inside
- iii) Cell – two lines, one longer (positive) and one shorter (negative)
- iv) Wire – a straight line connecting components
- v) Switch – a break in a line with a pivot

7. a) Define a fruit

A fruit is **the mature ovary of a flowering plant that contains seeds and develops after fertilization.**

b) List the four (4) main parts of the fruit

- i) **Exocarp** – the outer layer or skin of the fruit.
- ii) **Mesocarp** – the middle fleshy part.
- iii) **Endocarp** – the inner layer surrounding the seed.
- iv) **Seed** – the reproductive unit that can grow into a new plant.

c) List down two (2) examples of dry fruits

- i) **Groundnut**
- ii) **Cashew**

8. a) What is a lever?

A lever is **a rigid bar that rotates around a fixed point called a fulcrum to lift or move loads with the application of effort.**

b) Mention three (3) main parts of lever

- i) **Fulcrum** – the pivot point.
- ii) **Load** – the object to be moved.
- iii) **Effort** – the force applied to move the load.

c) Draw the diagram of seesaw to show the parts of lever – (pivot in the center, effort applied at one end, load at the other).

9. a) Name two (2) sources of water

- i) **Rivers** – surface water flowing from highlands to seas.
- ii) **Groundwater** – water stored beneath the soil in aquifers.

b) Identify two (2) causes of water pollution

- i) **Industrial discharge** – release of chemicals and waste into rivers.
- ii) **Domestic sewage** – untreated waste from homes contaminating water.

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c) Mention any four (4) uses of water

- i) **Drinking** – essential for survival.
- ii) **Irrigation** – watering crops for agriculture.
- iii) **Cooking** – preparation of food.
- iv) **Cleaning** – washing, bathing, and sanitation.

SECTION C:

10. a) Put the kind of foods in proper food nutrients

- i) Minerals – **cashewnuts, crabs**
- ii) Carbohydrates – **cassava, potato**
- iii) Vitamins – **mango, orange**
- iv) Lipids (Fats and oils) – **groundnut, octopus**

b i) Explain the meaning of malnutrition

Malnutrition is **a condition resulting from lack of proper nutrients in the diet, causing weakness, stunted growth, or susceptibility to diseases.**

ii) Deficiency of vitamin A in the diet causes **night blindness.**

c) Pick out and write any three (3) signs of marasmus

- i) **Loss of body weight** – extreme thinness due to energy deficiency.
- ii) **Hair loses its colour** – depigmentation due to nutrient deficiency.
- iii) **Legs and arms become thin** – muscle wasting and fat loss.

11. a) What can one do in order to make the body healthy?

- i) **Eat a balanced diet** – includes carbohydrates, proteins, vitamins, and minerals.
- ii) **Exercise regularly** – strengthens muscles and improves circulation.
- iii) **Drink clean water** – prevents dehydration and waterborne diseases.
- iv) **Get adequate sleep** – restores energy and immunity.
- v) **Maintain personal hygiene** – reduces infection risks.

b) Outline the cares needed for people living with HIV/AIDS

- i) **Provide nutritious diet** – strengthens immunity.
- ii) **Encourage adherence to medication** – to manage virus levels.
- iii) **Prevent opportunistic infections** – through hygiene and vaccines.
- iv) **Provide psychological support** – reduces stress and stigma.
- v) **Avoid sharing personal items** – prevents transmission to others.

12. a) Why an elderly person needs:

- i) Food with less energy – **to prevent obesity and reduce strain on the heart.**
- ii) Food rich in fibre – **to improve digestion and prevent constipation.**
- iii) Food rich in minerals – **to maintain bone strength and prevent deficiencies.**
- iv) Balanced diet – **to supply all essential nutrients for overall health.**

b) Label the parts of the digestive system diagram

- A. **Mouth**
- B. **Esophagus**
- C. **Stomach**
- D. **Small intestine**
- E. **Large intestine**
- F. **Anus**

13. a) What are water-borne diseases?

Water-borne diseases are **illnesses caused by consuming or coming into contact with contaminated water, often containing bacteria, viruses, or parasites.** Examples include cholera, typhoid, and dysentery.

b) Write down bacteria that causes cholera

Vibrio cholerae – the bacterium responsible for cholera infection.

c) Give any three (3) symptoms of cholera

- i) **Severe diarrhea** – leading to dehydration.
- ii) **Vomiting** – loss of fluids and electrolytes.
- iii) **Muscle cramps** – due to fluid and electrolyte imbalance.

d) Identify any three (3) prevention ways of cholera

- i) **Boil or treat drinking water** – kills bacteria.
- ii) **Maintain personal hygiene** – washing hands with soap.
- iii) **Proper sanitation** – safe disposal of human waste to prevent contamination.