



**THE PRESIDENT'S OFFICE**  
**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**  
**KILIMANJARO REGIONAL COMMISSIONER'S OFFICE**  
**FORM THREE JOINT EXAMINATION**  
**BIOLOGY-MARKING SCHEME NOVEMBER 2025**



**SECTION A: ( 16 MARKS)**

1.

**01@=10**

|    |    |     |    |   |    |     |      |    |   |
|----|----|-----|----|---|----|-----|------|----|---|
| i. | ii | iii | iv | v | vi | vii | viii | ix | x |
| D  | B  | A   | E  | A | B  | C   | B    | C  | D |

**Marks.**

2.

|        |   |    |     |    |   |    |
|--------|---|----|-----|----|---|----|
| LIST A | i | ii | iii | iv | v | vi |
| LIST B | G | A  | E   | F  | D | B  |

**01@=06 Marks.**

**SECTION B: ( 54 MARKS).**

3. (a) (i) Cholera ( 01 Marks)

(ii) Four ways of transmission of disease( Cholera)

- ❖ Contaminated water.
- ❖ Contaminated food.
- ❖ Poor sanitation and hygiene.
- ❖ Through Vectors example flies.
- ❖ Through person-to-person transmission

**Any four**

**points@01=04 Marks.**

(b) Four ways of prevention or control measures of disease( cholera).

- ❖ Wash hands after visiting toilet and before eating.
- ❖ Boil or treats drinking water.
- ❖ Eat hot food
- ❖ Vaccination
- ❖ Medical treatment.

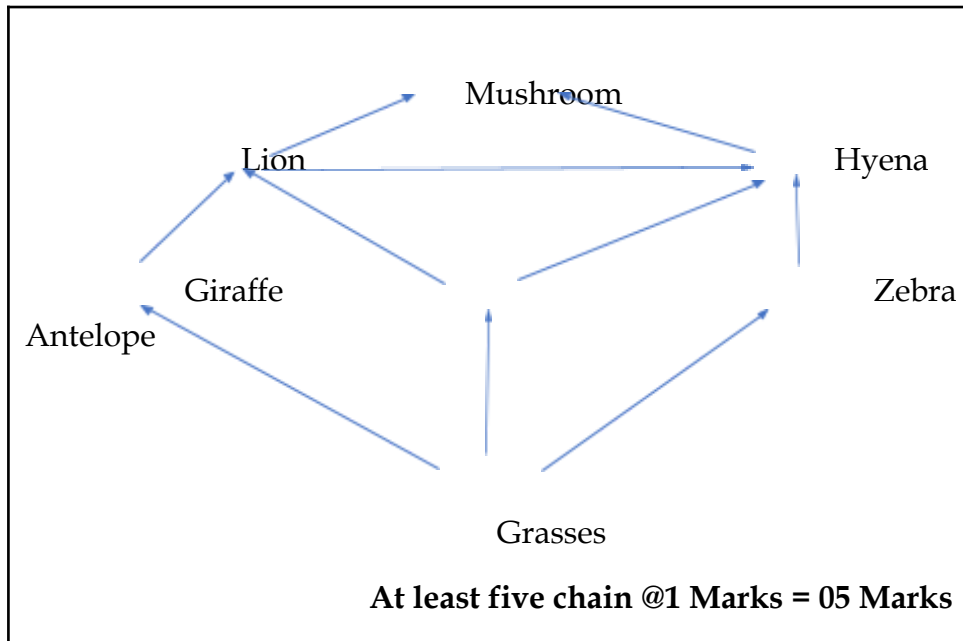
**Any four points**

**@01=04 Marks.**

4. (a) Food chains

- ❖ Grasses → Giraffe → Lion → Mushroom.
- ❖ Grasses → Zebra → Lion → Hyena → Mushroom. **Any two chain@01= 02 Marks.**
- ❖ Grasses → Antelope → Hyena → Mushroom.
- ❖ Grasses → Zebra → Hyena → Mushroom.

(b) Food web



(c) (i) Grasses (0.5 Mark)

(ii) - Lion

- Hyena

( @0.5 = 01 Mark)

(iii) Mushroom ( 0.5 Mark).

5. a) Excretory organs and it's corresponding excretory products.

| Excretory organs | Excretory products                                    |
|------------------|-------------------------------------------------------|
| i. Lungs         | -Carbondioxide and water vapour                       |
| ii. Kidneys      | -Excess water, Urea, and salts in form urine          |
| iii. Skin        | -Water, traces of urea and salts like Sodium chloride |
| iv. Liver        | -Urea and Bile                                        |

@01 =04 Marks.

(b) should water in to shortage of water. Therefore they have a long loop of Henle and fewer glomeruli which increase surface area for reabsorption of water. Thus they produce little but concentrated urine. ( 02 Marks).

Desert animals retain more their bodies due

(c) Importance of an excretory products of plants to human being.

- ❖ Some excretory product from plants such as oxygen which is released during photosynthesis is a vital component of respiration to animals.
- ❖ Used for medical purposes , example Quinine used to treat Malaria and Morphine and Cannabis produce painkillers.
- ❖ Used as Stimulants, some are taken to increase mental activities and reduce fatigue. Example Caffein and Khat.

- ❖ Some excretory product are used as natural pesticides in agriculture, Example Neem extract
- ❖ Used in industry to make shoes soles , tyre and rubber products , example Latex.
- ❖ Used in treatment of leather, example Tannins
- ❖ Used in industry as meat tenderizer, example Papain .

o **Any six points@ 0.5 = 03Marks.**

6. (a) (i) Constipation **( 02 Marks)**

(ii) Prevention and control of Constipation.

- Eat enough fibers such as Vegetables and fruits.
- Take enough drinking water and other liquids everyday.
- Engage in physical exercise regularly.
- Go for a long call when you feel the urge,
- Seek medical help if constipation is persistent.

**Any three points @ 01= 03 Marks.**

(b) Importance of photosynthesis .

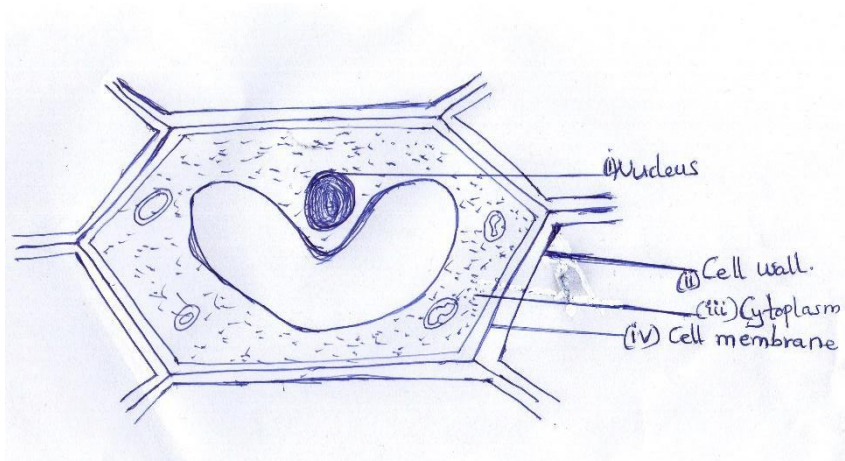
- ❖ Production of Oxygen gas which is vital in respiration.
- ❖ Food production, example Glucose which feeds both plants and animals.
- ❖ Production of Fuel example Charcoal and Coal.
- ❖ Balance of Carbon dioxide in the atmosphere.
- ❖ Conversion of Solar energy into Chemical energy.
- ❖ Production of water which is used by both plants and animals

**Any four points @ 01=**

**04 Marks.**

7. (a) Diagram of Plant cell).

maize cell (



- (i) Nucleus
- (ii) Cell wall
- (iii) Cytoplasm
- (iv) Cell Membrane

**Caption (01)**

**Diagram (01)**  
**Labelling @ 01=04**  
**Total = 06 Marks.**

**(b) Differences between maize cell and Goat cell.**

| <b>Maize cell (Plant cell)</b>     | <b>Goat cell (Animal cell)</b>    |
|------------------------------------|-----------------------------------|
| i. Has cell wall                   | ❖ Has no cell wall                |
| ii. Has chloroplast                | ❖ Has no Chloroplast              |
| iii. Has definite shape            | ❖ Has no definite shape           |
| iv. Has large permanent vacuole    | ❖ Has small temporary vacuole     |
| v. Nucleus is peripherally located | ❖ Nucleus is centrally located    |
| vi. Stored food in form of starch  | ❖ Stored food in form of glycogen |

**Any three points @01=03 Marks.**

8. (a) Two significance of Meiosis in relation to reproduction.

- ❖ For gamete formation .
- ❖ Source of variation in individual of the same species.

**@ 01=02 Marks.**

(b) Adaptation / Features of wind pollinated flower.

- ❖ Have small petals with exposed anthers and stigma.
- ❖ Have dull coloured petals that do not attract insect .
- ❖ Have no nectarines.
- ❖ Have smooth and dry pollen grains that can be easily picked by wind.
- ❖ They have large anthers which produce large amount of pollen grains.
- ❖ Their anthers are loosely attached to the filaments and hang freely to allow anthers easily shaken by wind.
- ❖ They have sticky stigma that traps pollen grains.
- ❖ Have long hairy style to expose stigma out of the flower.

**Any five @01= 05**

**Marks.**

(c) Functions of parts of the flower.

- (i) Stigma – To receive Pollen grains during pollination.

- (ii) Petal – Attract pollinators like bees, butterflies and birds due to their colour and smell.
- (iii) Ovary – It is a base of pistil which contain Ovules for fertilization.
- (iv) Anthers – It produce and release pollen which contain the male sex cells.

**@0.5= 02 Marks.**

### **SECTION C: ( 30 Marks).**

#### **09. Introduction .**

- ❖ **Endotherms** are animals that can regulate and maintain their constant internal body temperature even when surrounding temperature changes.

#### **Main body**

Endotherms have developed both physiological and behavioural mechanism that help them to withstand weather changes as follows;

- ❖ **Increased metabolic rate;** The body initiates more chemical reactions that changes carbohydrates and fats into energy to produce heat naturally.
- ❖ **Shivering;** In cold condition the skeletal muscles undergo rhythmic involuntary contractions which increases the amount of heat produced in the body.
- ❖ **Vasoconstriction;** When endotherms are subjected to cold condition the superficial arterioles are constricted and slow down blood flow to reduce heat loss through the skin.
- ❖ **Vasodilation;** When the temperature rises the superficial blood vessels near the body surface widening to increase blood flow to the skin surface which cause the heat loss to the surrounding (radiation).
- ❖ **Sweating ;** Endotherms such as human being have large number of sweat gland beneath the skin which enable them to cool their bodies when surrounding temperature rises.
- ❖ **Panting;** This mechanism is mostly done by Dogs and Cats as a way of cooling their bodies because they do not have sweat glands
- ❖ **Behavioural mechanism;** Some animals are Nocturnal example mice, bats and rodents by being active during the night and inactive during the day to avoid heat so as to minimize metabolic activities.

**Conclusion ( any relevant )**

**Introduction ( 02 Marks)**

**Main body ( Any six points @02 =12 Marks)**

**Conclusion( 01 Marks)**

**Total 15Marks.**

#### **10. Introduction**

**-Blood circulation** is the movement of blood from the heart to body parts and back to the heart.

#### **Main body**

Importance of blood circulation

- ❖ **Transport of Oxygen** which is necessary for respiration .

- ❖ **Transport of white blood cells** which help the body to fight infections and diseases.
- ❖ **Help to regulate body temperature**, flowing of blood distribute heat throughout the body and releases excess heat through the skin.
- ❖ **Transport of hormones** from the gland to targeted organs and tissues ,example insulin from Pancrease to control blood sugar.
- ❖ **To transport waste product** example Carbon dioxide from cells to prevent accumulation.
- ❖ **Transport of Nutrients** such as glucose and amino acid which are absorbed into blood after digestion and sent to cells for growth, repair and energy production.
- ❖ Help to maintain **PH** and **water balance**.

### **Conclusion**

We must maintain blood circulation by controlling eating habits and other life style by avoid eating foods with high level of cholesterol and fats that causes narrowing of blood vessels .Also doing physical exercise.

**Introduction ( 1.5 Marks)**

**Main body ( Any six points @02 =12 Marks)**

**Conclusion( 1.5 Marks)**

**Total 15Marks.**

## **11. Introduction**

-Respiration is the process by which food substances are broken down to release energy.

### **Main body**

Factors affecting rate of respiration;

- ❖ **Temperature**; The rate of respiration is slow at low temperature and increases with increase in temperature to the optimal level.
- ❖ **Activity**; The rate of respiration increases correspondingly with the activity of an organism to supply the amount of energy.
- ❖ **Age**; Young organisms are more active than older ones . Hence respire faster than older organism.
- ❖ **Body Size**; Small organisms loose heat faster than big organism therefore they need to respire faster than big organisms to replace the energy lost through heat.
- ❖ **Health**; When we are sick the rate of respiration increases so as to remove the toxic materials produced by pathogens in our bodies.

**Conclusion (Any relevant)**

**Introduction ( 1.5 Marks)**

**Main body ( Any five points @2.5 =12.5 Marks)**

**Conclusion( 01 Marks)**

**Total 15Marks.**

