

NAME.....ADM. NO.....CLASS.....

BIOLOGY**FORM 1****END TERM 1 2024****TIME: 2 HRS 15 MINUTES****MARKING SCHEME****Instructions: Answer all question in the spaces provided.**

1. a) Define biology. (1mk)
The study of life/living things
- b) State and explain the three main branches of biology. (3mks)
Botany – study of plants;
Zoology – study of animals;
Microbiology – study of microscopic organisms;
2. a) state three importances of studying biology. (3mks)
- Helps to solve environmental problems;(such as pollution)
 - Helps to acquire scientific skills such data collecting used in everyday living;
 - For entry into other professions/careers such as teaching;
 - Knowledge gained can be used to enhance international cooperation;
 - Understand developmental stages in the human body;
- b) Name 3 careers that require biology. (3mks)
- Medicine;
 - Teaching;
 - Horticulture (AVP)
3. List three environmental problems solved by studying biology. (3mks)
- Pollution;
 - Food shortage;
 - Drought;
 - Poor health;
 - Conservation of natural resources;

4. Complete the table below about sub divisions of biology. (11mks)

Branch	Definition
Entomology	Study of insects;
Genetics	Study of inheritance and variation;
Cytology;	Study of cells
Ornithology;	Study of birds
Ichthyology;	Study of fish
Anatomy	Study of internal structures of living organisms;
Ecology	Study of living organisms in their surroundings;
Morphology;	Study of external structure.
Physiology	Study of body functions;
Histology	Study of tissues;
Virology	Study of viruses;

5. a) State eight characteristics that make an organism be called a living organism. (8mks)

- Nutrition
- Growth and development
- Respiration
- sensitivity/irritability
- Excretion
- Movement/locomotion
- Reproduction
- Gaseous exchange;

b. How does nutrition differ in plants and animals? (2mks)



Plants manufacture their own food/ are autotrophic while animals do not manufacture their own food/ are heterotrophic;

6. A car/ Aeroplane is able to move from one place to another and give out exhaust gases but it is not classified as a living organism. List other characteristics of living things that do NOT occur in motor vehicles. (3mks)

- Growth and development;
- Irritability;
- Reproduction;

7. State the characteristic illustrated by the photos below.

(2mks)

Photo	Characteristics.
	Nutrition;
	Movement/locomotion;

8. Name the most suitable apparatus used to collect the following specimens for study in the laboratory.

(5mks)

Organism	Apparatus.
Grasshopper.	Sweep net;
Rat.	Bait trap;
Fish.	Fish net;
Ants.	Pooter/ pitfall trap;
Stinging nettle.	Pair of forceps;

9. Below is an apparatus used to trap specimen.

a) Identify the apparatus.

(1mk)

Pitfall trap;



b) State the purpose of the part labelled R.

(1mk)

Prevent entry of rain water or sun rays;

10. What is a specimen. (1mk)

A whole or a part of an organism being studied or examined;

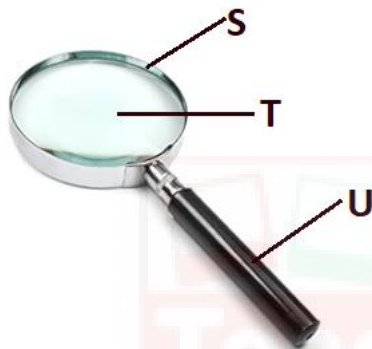
11. List three precautions made during collection and observation of specimen. (3mks)

- Collect only the number of specimens you need;
- Do not harm specimens during the capture(collection);
- Do not destroy the natural habitat of the specimen;
- After use return any live specimens back to their habitat whenever possible;
- Dangerous/ injurious specimens should be handled with a lot of care such include stinging plants or insects make use of forceps and hand gloves in such cases;
- For highly mobile animals they should be immobilized;

12. Below is a drawing of an apparatus used during the study of biology.

a) Identify the apparatus. (1mk)

Magnifying lens/ hand lens;



b) Name the parts labelled S, T, and U. (3mks)

S – Frame;

T – (convex) lens;

U – Handle;

c) State the function of the apparatus. (1mk)

Make small objects to appear larger/ enlarge specimen/ magnify specimen;

d) A student observing a head of an insect using a hand lens.

i) Write the formular used to calculate magnification of a specimen using a hand lens.(1mk)

$$\text{Magnification} = \frac{\text{drawing length}}{\text{Actual length}};$$

ii) She made a drawing of the head whose length was 3 cm. If the magnification was X2, calculate the actual length of the drawing. (3mks)

$$X2 = \frac{3\text{cm}}{\text{Actual length}} ;$$

$$\text{Actual length} = \frac{3}{2} ;$$

$$= 1.5\text{cm};$$

13. State three main differences between plants and animals.

(3mks)

Animals	Plants
Has Specialized complex excretory organs	Has simple excretory organs
Respond quickly to stimulus	respond to stimulus slowly
Has definite growth	Have indefinite growth
Move around to look for food	Stationery
Heterotrophic	Autotrophic
Cells have no cell walls	Cells have cell wall made of cellulose
Cells lack chlorophyll	Cells has chlorophyll

14. Define the following terms.

i. Taxon.

(1mk)

Group of organisms with similar characteristics;

ii. Species.

(1mk)

A group of organisms that can naturally interbreed to give rise to fertile offspring;

15. State two reasons that make scientific names to be written in Latin language.

(2mks)

- Does not change;

- Was widely spoken/ used by scientists during Linnaeus time;

16. State three importances of classification of living organisms.

(3mks)

- Place organisms in their right group for reference;

- Put together organisms with similar characteristic and separate those with different characteristic;

- Organize information about living organisms in an orderly manner to avoid chaos that may arise if it was done arbitrarily;

- Understand evolutionary relationship between organisms;

17. State all the taxonomic units in descending order.

(7mks)

Kingdom;
Phyla/division;
Class;
Order;
Family;
Genus;
Species;

18. Apart from Plantae and animalia, name the three other kingdoms of classification and give an example for each. (6mks)

Kingdom	Example
Fungi	Mushroom;
Protoctista	Amoeba;
Monera;	Bacteria; acc a good example;

19. a) what is binomial nomenclature.

(1mk)

Assigning of two scientific names to living organisms;

b) State three rules of binomial nomenclature.

(3mks)

- The genus name should start followed by scientific name;
- The name should be underlined separately when handwritten;
- The specific name is sometimes written with the name of the person who first described the organism adequately;

20. The scientific name of paw paw is *carica Papaya*.

a) Which taxonomic unit is represented by the name *carica*.

(1mk)

Genus;

b) State two mistakes made in writing the name.

(2mks)

- Starting the genus name with a small letter;
- Starting the species name with a capital letter;

c) Write the name correctly.

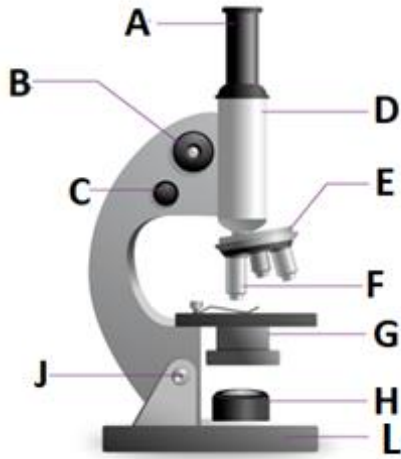
(1mk)

Carica papaya;

21. The scientific name of a tiger is *Panthera tigris* and that of Jaguar is *Panthera onca*. State a reason why a tiger and Jaguar cannot interbreed yet they belong to the same genus. (1mk)

They belong to different species;

22. Study the light microscope below and answer the questions that follows.



a) Name the parts labelled A – L.

(10mks)

- A – Eye piece;
- B – Coarse adjustment knob;
- C – Fine adjustment knob;
- D – Body tube;
- E – Revolving nose piece;
- F – High power objective lens; acc objective lens alone
- G – Condenser;
- H – Mirror;
- L – Base;

