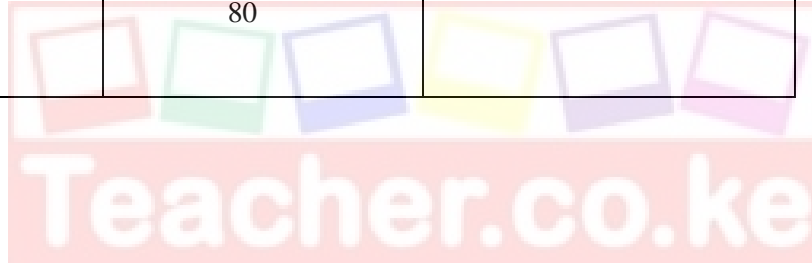




**BIOLOGY FORM ONE  
OPENER EXAM TERM 2 2023  
MARKING SCHEME**

**FOR EXAMINER'S USE ONLY**

<b>QUESTION</b>	<b>MAX. SCORE</b>	<b>CANDIDATE'S SCORE</b>
1 - 24	80	



**This paper consists of 8 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and no questions are missing.**

1. i). Zoology – scientific study of animals. (1mk)  
ii). Botany – scientific study of plants. (1mk)

2.

- i) Mitochondrion  
ii) Golgi apparatus/body (2mks)

3.

- i). Mycology  
ii). Cytology  
iii). Histology (2mks)

4. a) For light to pass through  
b) Avoid distortion

5. – Support of herbaceous plants  
- Osmoregulation  
- Feeding of insectivorous plants  
- Opening and closing of stomata (3mks)

6. a) Pair of forceps (**Rej**; forceps/forcep) – to pick stinging organisms such as scorpion

ii) Bait trap – to attract and trap small animals such as rats (rodents)

iii) Sweep net – to catch small flying organisms such as insects.

b.) State four precautions during collection and observation of specimen .(4mks)

Collect only required number , avoid wastage

Avoid destroying their habitat

Handle injurious specimen with care

Do not harm specimen during collection

Return the specimen alive to their habitat

7. Plants are autotrophic while animals are heterotrophic. (**OWTTE**)

8. It is a group of living organisms whose members can naturally and freely interbreed; to give rise to fertile/viable offspring;

9. i. The generic name begins with a capital letter while the specific name begins with a small letter.

ii. The botanical names are underlined separately when handwritten or typed and written in Italics when printed.

iii. The name must be in Latin or Latinized where Latin name is missing.

iv. The generic name always precede the specific name.

10. a) Xylem

b) Phloem

11. a) Packaging and transport of glycoproteins; Transport of synthesized materials as secretions

b) Site for protein synthesis

c) Contains lytic enzymes that destroy pathogens or worn out organelles/cells; Rej if lytic enzymes are not mentioned

12. a) Smooth endoplasmic reticulum; Rej wrong spellings; curriculum OWTTE

b) Centriole; Rej plural

13. a) i. Active transport

ii. Diffusion

14.)a Biological knowledge helps individuals to enter different careers such as medicine, dentistry, public health, animal husbandry and other applied sciences.

b. It is also useful in solving environmental problems such as food shortage, poor health, pollution and misuse of natural resources such as water and forests.

c. Helps in gaining and developing important scientific skills in observation, data collection, recording, analysis, interpretation, drawing appropriate and making relevant conclusions and recommendations needed in our daily lives.

d. Enhances international cooperation in the fields such as;

- Medicine – joint development of vaccine against HIV and AIDS, an initiative of Kenyan and British governments.
- Environment conservation – minimizing greenhouse gases effect to help mitigate destruction of ozone layer through international agreements as Kyoto Protocol.
- Universal classification and naming of living organisms to avoid chaos and confusion.
- Resource management through international treaties for instance convention against international trade in endangered species, (CITES).

e. Biology helps us to understand the human body and its developmental stages.

f. Through classification, it is possible to identify, group and organize information about living organisms accordingly without chaos and confusion.

15.

a It is semi-permeable/selectively permeable; (because it has tiny pores that allow only small sized molecules like glucose, water and iodine molecules to pass through and prevent the large sized molecules such as starch molecules to pass across).

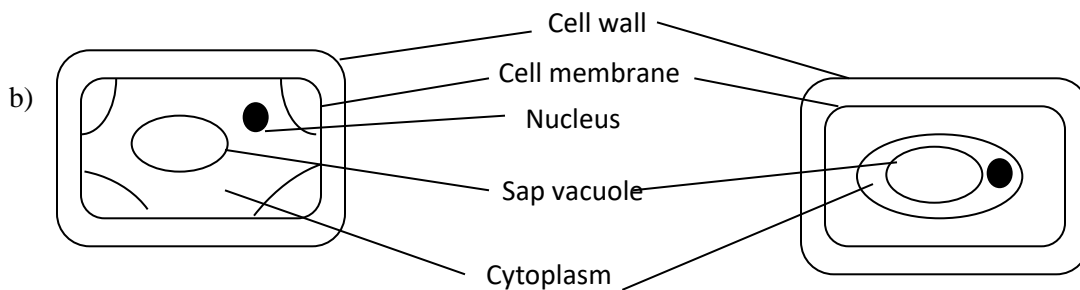
b. It is sensitive to changes in temperature; and pH changes; (where at extreme, its structure is altered hindering its normal functioning due to its protein nature).

c. It is polarized; /has net positive charges outside and negative charges inside; (This enables the membrane to detect the changes in the environment and control the manner in which substances flow into and out of the cell).

16.

- a. Helps in absorption of digested food materials (such as glucose and amino acids) from the alimentary canal across the thin wall of ileum into the bloodstream for transport to other parts of the body.
- b. Enables movement of respiratory gases; carbon (IV) oxide and oxygen across the respiratory surfaces such as cell membrane in amoeba and alveoli in human.
- c. Enables excretion of nitrogenous wastes in some fresh water organisms; (such amoeba).

17. a) the red cell was placed in a hypertonic solution; it lost water by osmosis; and remained crenated;



Start of plasmolysis

End of plasmolysis

18. - Presence of cell wall; which is rigid/does not stretch/tough;

19 a) A- Eye piece;

B- Coarse adjustment knob;

C- Fine adjustment knob;

D- Arm;

E – Mirror;

b) E – regulates the amount of light passing through condenser to illuminate the specimen;

F- Objective lens – brings image into focus and magnifies it;

c.) Eye piece lens magnification x Objective lens magnification ;

20. Lysosome

21 a) Genus

b) The genus name should begin with Capital letter and species name with a small letter;

Should be printed in italics or when handwritten should be underlined as separate words;

Should be Latinized i.e made to sound like Latin

23. List four careers that require knowledge in biology (4mks)

**Medicine – tourism**

**Pharmacy – veterinary medicine, dentistry**

**Nursing – public health**

24. Plantae;

Fungi;

Protoctista;

Monera;

