

Marking scheme

MANGU HIGH SCHOOL

Name Adm. No.

Class.....

Candidates Sign:

231/1

BIOLOGY

Paper 1

MOCK EXAMS – 2022

Time: 2 Hours



Kenya Certificate of Secondary Education (K.C.S.E)

Instructions to Candidates

- Write your name and index number in the spaces provided above.
- Answer all the questions in the spaces provided.

FOR EXAMINERS USE ONLY

Question	Maximum Score	Candidate's Score
1 - 31	80	

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

Turn Over

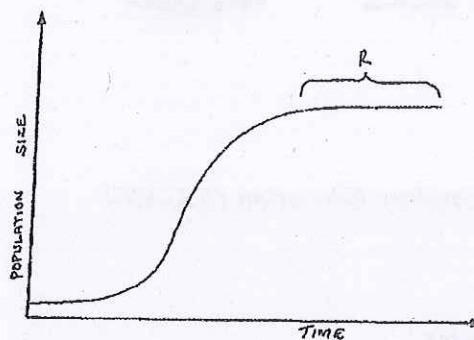
1. Why is the pancreas considered a dual gland? (2 mks)

its both endocrine and exocrine

2. State the function of cristae in mitochondria. (1 mk)

Increase surface area for attachment of respiratory enzymes;

3. The sketch graph below shows population growth rate of a certain organism



- List down four factors that could have caused limited growth at R. (4 mks)

- most cells have differentiated
- rate of cell division equals cell death
- limited food resources
- accumulation of metabolic wastes
- limited space

4. Suggest why green plants are included in the fish aquarium. (3 mks)

- To use carbon(IV) oxide
- provide oxygen
- provide breeding sites

5. State two observable features that can be used to identify the members of the phylum chordata. (2 mks)

- presence of postanal tail
- presence of notochord

6. Name causative agent for each of the following diseases.

a) Typhoid

(1 mk)

Salmonella typhi

b) Malaria

(1 mk)

Plasmodium falciparum ; any other species

7. State **three** functions of blood other than transport.

(3 mks)

- protection from infections
- Blood clotting
- thermoregulation

8. Give two reasons why lumbar vertebrae have long and broad transverse processes. (2 mks)

- increase S.A for attachment of abdominal muscles
- provide support (withstand weight of abdomen)

9. Give three differences between endocrine system and nervous system.

(3 mks)

Endocrine system	Nervous system
- use hormones	- use nerve impulses
- hormones are carried by blood	- impulses are carried by nerve
- slower	- faster

- effects long lasting
- effects short lived

10. State **three** ways in which seed dormancy benefits a plant.

(3 mks)

- allows time for dispersal
- allows maturation of embryo
- enable the plant survive harsh environment

11. Give an example of a sex linked trait in humans on;

Y chromosome

(1 mk)

Heavy ping / nose / webbed toes / premature baldness

X chromosome

(1 mk)

Colour blindness / haemophilia / Duchenne muscle dystrophy

12. Name three gaseous exchange structures in higher plants. (3 mks)

- stomata
- lenticels
- cuticle
- epidermis

13. Name three features that distinguish man from apes even though they are closely related in evolutionary Tree. (3 mks)

- Bipedal gait
- enlarged brain/skull
- smaller lower jaw
- smaller canines
- non opposable toe

14. Give a reason for the following;

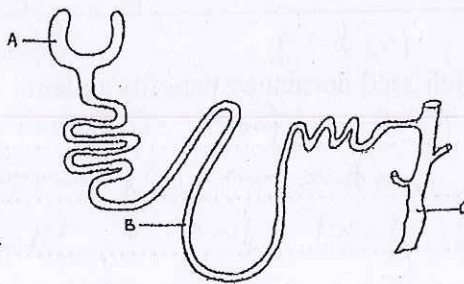
- a) A mature plant cell does not lose its shape even after losing water. (1 mk)

It has rigid cellulose cell wall

- b) Xylem vessels do not collapse when they do not contain water. (1 mk)

Their walls are lignified.

15. The diagram below represents a nephron of a mammal



- a) Name the parts marked A and B (2 mks)

A Bowman's capsule

B descending loop of Henle

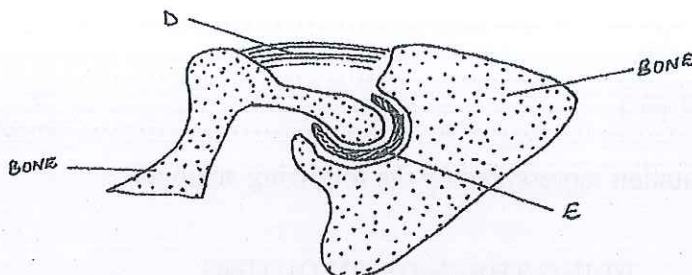
- b) Name a major substance in glomerular filtrate whose concentration remains the same between A and C. (1 mk)

urea

16. What is the function of eustachian tube that link the middle ear with the throat. (1 mk)

..... equalize pressure between the middle
..... and outer ear (to prevent bursting of eardrum)

17. Below is a diagram of a joint in a mammalian skeleton



- (a) Name the type of joint represented by the diagram above. (1 mk)

..... Ball and socket

- (b) Identify the part labeled D and E (2 mks)

D ligament

E synovial fluid

18. State how the alveolus of the lungs of a mammal is adapted to its function. (3 mks)

..... - highly vascularized for rapid transport of gases;
..... - moist to dissolve gases
..... - thin epithelium for rapid diffusion of gases
..... - large surface area for rapid diffusion of gases

19. State the function of cerebrospinal fluid. (2 mks)

..... - provide oxygen and nutrients to brain (support) and
..... - absorbs the shock

20. Explain how water from the soil reaches the xylem vessels of the root. (4 mks)

..... - Soil solution is hypotonic to cell sap of root
..... hair cells; water enters into root hairs by osmosis;
..... cell sap of root hair becomes hypotonic to sap
..... of adjacent cortex cells causing them to gain water;
..... this continues until water enters the xylem

21. State the functions of the following parts of the human ear. (2mks)

- (a) Ear ossicles

..... Convert sound into vibrations
..... amplify sound vibrations

(b) Cochlea

..... Contains endolymph and perilymph which move sensory hairs

22. Name three types of muscles found in human body. (3 mks)

.....
 - Cardiac
 - smooth
 - skeletal

23. Write the type of gene mutation represented by the following analogue.

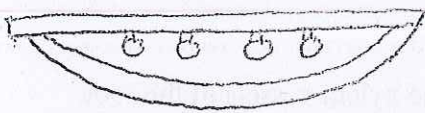
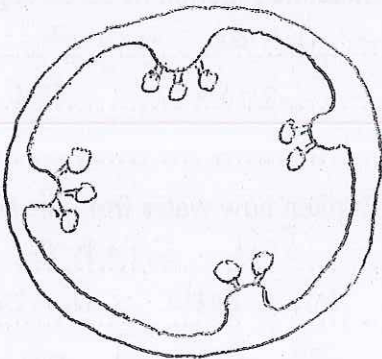
(i) Intended message: BRING THERMOS ON OUTING
 Actual message: BRING MOTHERS ON OUTING

Type Inversion (1 mk)

(ii) Intended message PLEASE SAY WHERE YOU ARE
 Actual message PLEASE STAY WHERE YOU RAE

Type Inversion (1 mk)

24. With an aid of diagram distinguish between marginal and parietal placentation in fruits. (2 mks)

Marginal	Parietal
	

25. Name two raw materials for the process of photosynthesis (2 mks)

- water
- Carbon (iv) oxide

26. Giving reasons, identify the mode of feeding of the animal whose dental formula is given below.

$$\begin{array}{cccc} \frac{0}{2} & \frac{0}{0} & \frac{3}{3} & \frac{2}{2} \\ I & C & PM & M \end{array}$$

Mode of feeding (1 mk)

Herbivorous

Reasons (2 mks)

- Law of incisors on upper jaw
- Lack of canines on both jaws

27. Name three characteristics of wind pollinated flowers. (3 mks)

- large anthers
- small pollen grains / light pollen
- feathery stigma / sticky stigma
- long filaments

28. Give two reasons why accumulation of lactic acid during vigorous exercise leads to an increase in heart beat. (2 mks)

- Increase supply of oxygen to muscles
- Rapid transport of lactic acid to the liver

29. Explain why sexual reproduction is important in organisms. (2 mks)

It leads to mixing of genetic material / exchange of genetic material; which cause variations;

30. a) Name two sources of oil as a water pollutant.

(2 mks)

- oil tankers accident
- Damaged warships

b) For each of the sources named in (a) above, state one way of controlling it. (2 mks)

- use pipelines to transport oil
- Peaceful resolution of conflicts / cleaning oil spills using bacteria

31. Name three secondary sexual characteristics that start occurring in human males on the onset of testosterone hormone production.

(3 mks)

- Facial hair / pubic hair
- Deepening of voice
- enlargement of testis and penis
- Increase in masculinity
- broadening of shoulders