**NOVEMBER 2022 EXAMINATION**

**BIOLOGY FORM 3 PAPER 1.**

**MARKING SCHEME.**

1. (a) Catching of flying insects. (1mark).

(b) Botany (1 mark).

Zoology (1 mark).

Microbiology(1 mark).

2.(i) Ribosome (1 mark).

(ii) Golgi apparatus (1 mark).

3. (a) Kingdom Protoctista / Protista (1 mk). Reject small p.

(b) Pseudopodia (1 mark).

(c) Excretion of excess water (1 mark).

4. Energy (1 mark).

Ethanol (1 mark).

5. (a) Sebum (1 mark).

(b) Regulate the body temperature by cooling the body (1 mark).

Excretion of mineral salts (Any one correct).

6.(a) Number of limbs.

Number of body parts.

Number of body segmentation (2 marks).

(b) Insecta (1 mark). Reject small i

7. They lack antigen in their blood hence no antigen antibody reaction hence donating to all blood groups (1 mark).

8. (a) Osmosis (1 mark).

(b) The visking tubing becomes turgid (1 mark).

(c) Water molecules move from the solution in the beaker by osmosis to the visking tubing making it to become turgid. This is because the solution in the beaker is hypotonic to the solution in the visking tubing. (2 marks).( NB: a, b and c are tied answers).

9. (a) (i) Inadequate secretion of insulin in the pancreas (1 mark).

(ii) Inadequate release of Antidiuretic hormone in the pituitary gland (1 mark).

(b) Take a sample of urine in a test tube

Add equal amount of Benedict’s solution. Reject small b for Benedict’s and reject if there is no apostrophy ‘

Heat the mixture to boil.

Presence of orange colour indicates presence of glucose in the urine hence Diabetes Mellitus (3 marks).

10. Green plants mice snakes hawks (1 mark).

Green plants mice snakes wild cat (1 mark).

(b) Mice (1 mark).

(c) All green plants would dry up hence all consumers would decrease.

Some organisms would starve to death leading to decrease in population.

Some organisms would migrate hence decrease in population (3 marks).

11. Tilapia zilli.

Tilapia leucastica.

Tilapia variabilis (3 marks).

(b) They belong to the same genus (1 mark).

(c) Group of organisms which can naturally interbreed to give vise to viable offsprings (1 mark).

12 (a) Antipodal cells (1 mark).

Synergids (1 mark).

(b) Fuses with one male nuclei to produce a triploid endosperm nucleus (1 mark).

13. (a) Xylem tissues (1 mark).

(b) They are lignified along the walls (1 mark).

14. (a) A-cell differentiation (1 mark).

B-cell elongation (1 mark).

C- cell division (1 mark).

(b) Protect the apical meristem from mechanical damage (1 mark).

15. (a) Pepsinogen (1 mark).

Trypsinogen (1 mark).

(b) To prevent the digestion of cells that produce them (1 mark).

16 (a) Magnification = Drawing length (1 mark)

Length of the object

=6/12

=× 0.5 or × ½ (2 marks). Reject if × is missing.

(b) Vitamin k (1 mark).

Calcium ions Ca2+ (1 mark).

17 (a) (i) D-Ribcage (1 mark).

(ii) E- Diaphragm (1 mark).

(b) The balloons inflate (1 mark).

(c) This is because there will be an increase in volume and decrease in pressure inside the bell jar. Air would move into the balloons. (2 marks).

18. (a) Premolar (1 mark). Reject plural.

(b) Has two roots (1 mark).

(c) Has a large and flat surface to increase the surface area for grinding (1 mark)

19 (a) (i) Oxygen gas (1 mark).

Carbon (IV) oxide gas (1 mark). Reject (iv) for Carbon (IV) oxide.

(b) Oxyhaemoglobin (1 mark). Reject wrong spelling

(c) Fluid formed from the capillaries after ultrafiltration has taken place (1 mark).

20. (a) Sperm cell /spermatozoa (1 mark). Reject plural.

(b) Fertilises the ovum to produce a zygote (2 marks).

(c) K- Head.

L- Middle piece.

M- Tail. (3 marks).

21. (a) To show that germinating seeds produce heat when they respire (1 mark).

(b) Flask A- There will be a rise in temperature (1 mark).

Flask B- Temperature remained constant (1 mark).

(c) Soaked seeds germinated respiring the food stored in seeds to produce energy:

Part of this energy occurs as heat, the heat causes a rise in temperature in the thermometer

(2 marks).

22. (a) (i) Diffusion (1 mark).

(ii) Its highly concentrated in the seawater than it is in the cell sap (1 mark).

( i and ii are tied).

(b) (i) Iodide ion (1 mark).

(ii) Uptake of the iodide ion require energy (1 mark).