**MARKING SCHEME BIOLOGY FORM 3 PAPER 1 TERM TWO**

1. Growth is the irreversible increase in size and mass while development is the irreversible change in complexity of a living organism. (1x2 = 2mks)

 Award as a whole

1. Nucleolus (1x1 = 1mk)
2. Nucleus (1x1 = 1mk)

 **Plants Animals**

* Have chlorophyll No chlorophyll
* Have cellulose cell wall Lack cellulose cell wall
* Respond slowly to changes in their environment Respond quickly
* Plants do not move about Do move about
* Lack specialized excretory organs Have complex excretory organs

 (1x4 = 4mks)

1. Concentrates light on the object on the stage (1x1 = 1mk)
2. Brings image into focus and magnifies it (1x1 = 1mk)
3. Holds the eye-piece and revolving nose-piece (1x1 = 1mk)
4. An aperture that regulates the amount of light passing through the condenser to illuminate the specimen (1x1 = 1mk)

A - Condensation

B – Hydrolysis (1x2 = 2mks)

1. Sucrose (1x1 = 1mk)
2. Covalent bond (1x1 = 1mk)

6. a) To investigate the effect of boiled saliva on starch/to show the effect boiled/denature enzyme amylase has on starch; (1x1 = 1mk)

 b) A-brown colour/colour of iodine persists;

 B- blue black/blue/dark colouration;

A-starch has been digested/starch has been broken down/amylase hydrolyses starch hence no

 colour changes;

B-enzymes/amylase denatured hence no starch digested; (1x4 = 4mks)

7.Oxygen-releases to the atmosphere or used by plants for respiration;

* Hydrogen-enter dark stage, where it combines with CO2 to form simple sugar;
* ATP- provide energy during the combination of hydrogen a toms with CO2in dark stage;

8.Biconcave disc shaped to increase surface area for gaseous exchange;

* Have no nucleus to increase room for the package of red blood cells;
* Numerous in number to increase surface area for the transportation of oxygen
* Have haemoglobin which has a high affinity of oxygen;
* Cytoplasmic filaments/strands along which food streams;
* Companion cells have mitochondria that provide energy for translocation;
* Sieve plates with sieve pores through which cytoplasmic filaments pass.
* Photoplasmic material pushed on the sides to create lumen space for translocation;

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9. a) Sunken stomata form pits; in which water vapour accumulates reducing rate of transpiration

 x= 2mks)

 b) Water proof; to reduce the rate of transpiration; (1x2 = 2mks)

10.

 a) Lignin; (1x1 = 1mk)

 b) Phloem; (1x1 = 1mk)

 c) Xylem; (1x1 = 1mk)

11.

 a) A – Gill rakers act as a screen preventing entry of food and other particles that might damage the delicate gill lamella; (1x1 = 1mk)

 B – Gill bar for attachment of gill rakers and gill filament (1x1 = 1mk)

 C – Gill filaments – the surface on which gaseous exchange take place (1x1 = 1mk)

Filaments are supplied with a dense network of blood capillaries for the efficient transport of gases;

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 12. Lungs (1x1 = 1mk)

13.

 a) Glycolysis

* Krebs cycle (1x2 = 2mks)

 b) Carbon IV Oxide

* Ethanol
* Energy (1x2 = 2mks)

14.Cocaine

* Cannabis
* Khat (1x3 = 3mks)

15.

 a) Glucose; (1x1 = 1mk)

 b) The person was a sufferer of diabetes mellitus; (1x1 = 1mk)

 c) Pancreas; (1x1 = 1mk)

16. Nephritis

* Kidney stone
* Albuminuria
* Kidney failure (1x3 = 3mks)

17.

 a) taxonomy is the classification of living organisms on their similarities and difference observed

 = 1mk)

 b) (i) Rottus norvegicus (1mk) (Genus name MUST begin with capital letter and be underlined

 separately) (1x1 = 1mk)

 (ii) Genus – Rattus;

 Species – norvegicus; (1x2 = 2mks)

18. a) Fungi; (1x1 = 1mk)

 b) Sporulation; (1x1 = 1mk)

 c)Whorled

* Opposite
* Alternate (1x3 = 3mks)

19.

 a) Help to breakdown dead organic matter hence reducing bulk; in the recycling of Nutrients;

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 b) Regulate the predator – prey population; (1x2 = 2mks)

20.

 a) Grass\_\_\_\_\_ Grasshoppers \_\_\_\_\_\_Birds; (1x2 = 2mks)

 b) Not all the energy is transferred from one trophic level to another; some is lost as heat, some is used up during metabolism and some is lost when organisms die and decay; (1x2 = 2mks)

21.*Vibrio cholerae* (1x1 = 1mk)

1. *Salmonela typhe* (1x1 = 1mk)

22.

1. Quadrat
2. Capture Recapture method
3. Line transect
4. Belt transect (1x3 = 3mks)

23.Integuments ; (1x1 = 1mk)

1. Primary endosperm nucleus; (1x1 = 1mk)