

MARKING SCHEME BIOLOGY FORM3 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

- 2.
- a) Nucleolus (1x1 = 1mk)
 - b) Nucleus (1x1 = 1mk)

- 3.
- | Plants | Animals |
|---|---|
| <ul style="list-style-type: none">• Have chlorophyll• Have cellulose cell wall• Respond slowly to changes in their environment• Plants do not move about• Lack specialized excretory organs | <ul style="list-style-type: none">No chlorophyllLack cellulose cell wallRespond quicklyDo move aboutHave complex excretory organs |
- (1x4 = 4mks)

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

a)

A - Condensation

B -Hydrolysis

(1x2 = 2mks)

- b) Sucrose (1x1 = 1mk)
- c) 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/colourof 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-enters dark stage, where it combines with CO₂ to form simple sugar;
- ATP- provides energy during the combination of hydrogen atoms with CO₂ in 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.
- Protoplasmic material pushed on the sides to create lumen space for translocation;

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 takes place (1x1 = 1mk)

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

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) Rottusnorvegicus(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;

)

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)

a) *Salmonella typhi*

(1x1 = 1mk)

22.

- a) Quadrat
- b) Capture Recapture method
- c) Line transect
- d) Belt transect

(1x3 = 3mks)

23. Integuments ;

(1x1 = 1mk)

a) Primary endosperm nucleus;

(1x1 = 1mk)