

**FORM 4 BIOLOGY 231/1****MARKING SCHEME.**

- 1.[a]Ovule  
[b]Ovary
2. Aerenchyma tissue with large air spaces to store air.  
Large stomata found on the upper surface of the leaf
- 3.[a]-Prokaryotic  
-Cell not made of cellulose  
-Few organelles  
[b] Diplopoda
- 4.[a] –Homodont –teeth of the same size and shape  
– Heterodont –teeth of different size and shape  
[b]Special pre-molars with smooth sides and sharp edges to slice through flesh and crush bones
- 5 [a] -B  
-AB'  
[b] O –Universal donor since they have no antigens  
A – Same blood group hence agglutination
- 6.[a]-[i] Food web  
-[ii] Three  
[b] Sun
7. Guard cells
- 8.[a] Deamination  
[b] Enzyme aminase  
[c] Removal of the excess amino acids which cannot be stored in the body
- 9.[a] Glycogen  
[b]Egestion
- 10.[a]-[i]Science of classification  
-[ii]Uses evolutionary relationship between specimen and their ancestor
- 11.[a]-[i]They have lobed nuclei  
-[ii] Lysosomes
- 12.[a]Lignin  
[b]Phloem
13. [i] –Packing and transport in vesicles of material such as enzyme  
– Secretion of synthesized proteins, carbohydrates  
– Process of cisternae  
– Involved in lysosome formation  
  
[ii] A. Golgi bodies  
B. Golgi vesicles
- 14 – Guard cells have chloroplast hence photosynthesis  
–Have thicker inner walls and thin outer walls for differential expansion to facilitate opening and closing of the stomata.  
–Are bean shaped
- 15.[a]ATP-Adenosine triphosphate  
CO<sub>2</sub>-Carbon [IV] oxide  
H<sub>2</sub>O-Water  
[b] Catalyst [enzyme]
- 16.Food stored in the endosperm was oxidized to form energy for the process and also form new material for growth in the embryo.
- 17.

STAGE OF LIFE CYCLE	LETTER
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Male gametophyte	D
Tube nucleus	G
Female gamete	B
Male gamete	F

- 18.[a] [i]Anaphase  
 [ii]-Homologous chromosome separate at the equator  
 [ii]-Chromosomes start migrating to opposite poles  
 [b] Spindle fibres
- 19.-Plants are able to synthesize their own food.  
 -Plants are able to use pollination rather than moving to seek mating partners.  
 -Plants use seed and fruits dispersed to colonize new habitats.
- 20.-Diffusion  
 -Osmosis  
 -Active transport
- 21.[a]Insulin  
 [b]Diabetes mellitus
- 22.[a]  $RQ = \frac{\text{volume of carbon[iv] oxide produced}}{\text{Volume of oxygen consumed}}$   
 $5/6 = 0.83$   
 [b] Proteins
- 23.[a]Pitfall trap  
 [b] For catching crawling animals
- 24.-Temperature  
 -Light
- 25.[i] CGGATCTAGTG  
 [ii]CGGAUCUAGUG
- 26.-Several missing links  
 -Most organisms especially soft-bodied ones do not form fossils  
 -Exposed fossils are usually destroyed by physical and chemical weathering  
 -Most animals are preyed upon.
- 27.Plants make their own food from carbon[iv] oxide and water while animals depend on already manufactured food from plants directly or indirectly
28. [i]Holds the eyepiece and the revolving nosepiece  
 [ii]An aperture that regulates the amount of light passing through the condenser to illuminate the specimen.
- 29.-Thin walled  
 -Highly vascularized  
 -Has a large surface area
- 30.-Mutation  
 -Crossing over during prophase of meiosis  
 -Sexual reproduction [fertilization]  
 -Independent assortment of chromosomes during metaphase of meiosis 1

