**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 orginaze

[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]Ligin

[b]Phloem

13. [i] –Packing and transport in venicles 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

CO2-Carbon [IV] oxide

H2O-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 |
| 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 = volume of carbon[iv] oxide produced

Volume of oxygen consumed

5/6 =0.83

[b] Proteins

23.[a]Pitfall trap

[b] For catching crawing 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