****

 FORM 4 ENTRANCE EXAMS 2023

**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] (i)Anaphase1

 (ii) -Homologous chromosomes separate towards the poles

b -Spindle fibres contract separating the homologous chromosomes

 b) Spidle fibre

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 no 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

9.[a] Glycogen

 [b]Egestion

10.[a]-[i]Science of classification

 -[ii]Uses evolutionary relationship between organism and their ancestor

11.[a]-[i]They have lobed nuclei

 -[ii] Lysosomes

12.[a]Lignin

 [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 Apparatus

 B. Golgi vesicles/ bodies

14 – Guard cells have chloroplast hence photosynthesis, epidermal cells are transparent

 –Have thicker inner walls and thin outer walls for differential expansion to facilitate opening and closing of the stomata.

 –Are bean shaped

 -Epidermal cells have uniformly thickened walls

 -Epidermal cells are rectangular flattened cells

15.[a]ATP-Adenosine triphosphate

 CO2-Carbon [IV] oxide

 H2O-Water

 [b] Enzymes

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. Embryo grows and develops forming new issues that result in increase in weight

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

18. -Their nuclear material is not enclosed within a nuclear membrane so the genetic material is not separated from the rest of the cell/Prokaryotic

 - They do not have membrane bound organelles

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, glucagon

 [b]Diabetes mellitus, Hypoglycaemia

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 crawling animals

24.-Temperature; Humidity

 -Light ; Atmospheric pressure

25.[i] CGGATCTAGTG

 [ii]CGGTUCUTGUG

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.Some individuals in a population possess genes that have undergone mutations resulting in resistance against some chemicals. The mutations establish a population of resistant forms

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.-Substitution

 -Inversion

 -insertion

30.-Mutation

 -Crossing over during prophase of meiosis

 -Sexual reproduction [fertilization]

 -Independent assortment of chromosomes during metaphase of meiosis 1

31. (a) Malaria

 (b) Amoebic dysentry