**BIOLOGY PAPER 1 MARKING SCHEME.SCHEME.**

**DECEMBER EXAM 2021**

**FORM FOUR**

1. Cell sap: -. Offers turgidity of the cell contributing to mechanical support;

-. Regulates the osmotic pressure of the cell, of the plant;

-. Contains sugars ions and waste products.

2. Pinna, 1. It collects and direct/concentrates; sound waves into the auditory meatus;

3. originally all ducks had unwebbed feet; because of competition for food they started using feet as peddlers in water; in search of food the feet later developed acquired webs; the subsequent generation were all born with webbed feet/inherited webbed feet.

4.

|  |  |
| --- | --- |
| Millipede | Centipede |
| Body divided into three head, thorax and trunk | Body divided into two head and trunk (has fifteen segment) |
| Have two pairs of limps on each segment hence diplopoda | Have one pair of limbs in each segment. |
| Two pairs of simple eyes | One pair of simple eyes |
| Have cylindrical bodies | Have elongated dorso-ventrally flattened bodies |
| Feed on dead organic matter detritivorers / herbivores | Carnivores |

5. Sweating decrease; Hair is raised; blood kept from the surface and metabolic rate

increases. body temperature raises shivering to generate heat by contraction of muscles.

6. a) catalase;

b) Sodium glycocholate;

Sodium taurocholate;

7. (i) Habitat refers to the specific place (locality) where an organism lives in an ecosystem;

(ii) Population: Refers to members of one species occupying a particular habitat at a given time while Community constitutes two or more populations i.e. (Many species) occupying and

Interacting in the same habitat.

(iii) P = FM x SC 600 x 400; 2,000

MR 120

8.a) -stores genetic information in a coded form.

* + Enables transfer of genetic information unchanged to daughter cells through replication.
  + Translates the genetic information into the characteristics of an organism through protein synthesis.

b) DNA duplication making exact copies of itself.

c) RNA. Presence of uracil

9. X- Tube nucleus: Facilitates in growth of pollen tube and assist in piercing the embryo sac.

Y- Generative nucleus: divides mitotically to give rise to two male nuclei.

10. a)Light amount / Intensity

b) Circular muscles of the iris contract; while radial muscles relax; and the pupil becomes smaller, This prevent damage of the retina by excessive light.

11.a) Tertiary consumers.

b) Predators.

c) 100KJ

12. -Have stomata on the upper leaf surface large leaf surface to increase surface area for light absorption.

- Presence of aerenchyma tissue that allows them to float on water; Hence accessing sunlight

13. a) positive Hydrotaxis

b) Thigmotropism

c) -Thigmotropism enables herbaceous plants to get mechanical support; expose leaves to light for photosynthesis.

15.

|  |  |
| --- | --- |
| Sensory neurone | Motor neurone |
| -Cell body off the axon  -terminal dendrites located inside the CNS | -cell body at one end of the axon  -Receptor dendrites inside the CNS |

16. -ability to fly

- inhabit all types of habitats

-feed on variety of foods

17. Low energy losses by respiration, excretion, defaecation hence the end consumer receive a lot of energy

18. so that heat energy is released in small quantities and in stages to avoid bursting of the cell

19. (a) Insulin and glucagon for controlling blood glucose are secreted directly into the blood, pancreatic juice contain digestive enzymes conveyed to the duodenum by pancreatic duct stopped;

20. (a) Q- malleus (hammer)

S- stapes (stirrup)

-both Q, S and incus amplifies and transmits the vibrations from tympanic membrane to the oval window.

(b) Hearing impaired since the pressure on both sides of the eardrum would not be equalized, hence the eardrum would not vibrate / distorted

21. i) Transpiration / loss of water through leaves

ii) The lower cobalt II chloride paper turned pink faster than the upper cobalt II Chloride paper.

22. a) Location of Genes on the sex-chromosomes.

(b) Premature baldness, hairy pinna/hairy ears.

23. a) E – radius

F – Ulna

b) Hinge joint

24. a) Smooth endoplasmic reticulum

b) Lysosome

25. a) Enterokinase

b) Doudenum

c) Proteins

peptides

26.- Body parts / Division;

-no. of limbs/ walking legs;

-body segment;

27. a) prophase I;

b.i) An ovum is fertilized; and later cells separate in early stages of cell division;

ii) Two ova are released; and fertilized by two different sperms;

28. a) golgi bodies/apparatus **rej**  Golgi body/ apparator

b) mitochondria **rej** Mitochondorion

29. Mitochondrion