**LARI SUB-COUNTY**

**END OF TERM TWO 2019 EXAMINATION**

**BIOLOGY PAPER 231/1**

**MARKING SCHEME**

1. - Buccal cavity/ prank 

- Lungs 

 - Skin 

2. - remove carbon (IV) oxide from the pond

- Provide breeding site for fish 

 - Provide oxygen for the fish/aquatic organism 

3. - Transpiration pull 

- Capillarity 

- Adhesion /cohesion

-Root pressure 

- Diffusion

- Osmosis 

4. - Dorsal/Anal fins 

- Pectoral/Pelvic fin

- Dorsal/ventral fins/caudal fins 

5. - Albinism 

- Sickle cell anaemia 

- Haemophilia 

- Phenylketonuria 

- colour blindness 

- chondroplasia/chondrodystrophic

b) i) Occurs when chromatid breaks and when rejoining rotates and joins in an inserted position 

 ii) Translocation – Occurs when a section of a chromatid breaks off and becomes attacked to another chromatid of another chromosome. 

6. - Insufficient utilization of food resources/wastage 

 - Through respiration 

 - Through inhalation/urination/micturition  Accept – defeacation 

7. a)- Fovea/ Yellow spot/fovea centralis 

 b) – Upside down/inverted

 - Back to front/reversed

 - Smaller than object/diminished

 - Real

8. - Collenchyma

9. - Causes ovulation 

 - Induces grafian follicle to become corpus luteum 

 - Stimulates corpus luteum to release progesterone. 

10. - i) Condition in which the stamen/anthers of a flower mature before the carpels ∕ stigma / pistil

 Acc- Male parts mature before female parts of the flower 

 ii) Self sterility

 - Pollen grains from anthers of a flower fail to germinate on the stigma of the same flower

11.

|  |  |
| --- | --- |
|  Ball and socket | Hinge joint |
| - Allow movement in all planes/ 3600 | -Allows movt only in one plane /1800 |

b) - Shock absorber/distributes pressure 

 - Lubricates joints

 - Nourishes the cartilage/supplies oxygen

12. a) Diffusion 

b) Visking tubing is semi-permeable 

 - Iodine molecules Move from beaker into the visking tubing 

 - Thus producing the blue-black colour with starch solution

 - Starch molecules are too large to pass through the walls of the visking tubing into solution in the

 beaker

 - therefore Iodine solution doesn’t change colour  (3first correct answers)

13. a) – Sieve tubes /sieve tube element/ sieve element

 - companion cell/cytoplasmic strand/filaments 

b) Amino acids 

 - Hormones 

 - Lipids/oils

 - Resins 

 - itamins 

14. - Biconcave shaped to provide a large surface area for absorption of oxygen/carbon (IV) oxide 

 - Absence of nucleus hence more haemoglibin to carry sufficient oxygen/carbon (IV) oxide

 - Alter shape to enable to pass through the narrow lumen of capillaries to supply oxygen/ remove carbon (IV) oxide 

- Have haemoglobin with high affinity for oxygen/carbon (IV) oxide/uptake of more oxygen/carbon (IV) oxide. 

 - RBC are many/numerous to carry more oxygen/carbon (IV) oxide

Rejct – answer if carbon iv oxide/carbon (iv) oxide

15. - The amount of oxygen required to convert (accumulated) lactic acid to water, carbon (IV) oxide and energy/amount of oxygen required to get rid of (accumulated) lactic acid (when supply of oxygen is less than demand)/anaerobic respiration. 

|  |  |
| --- | --- |
| - Plant | Animal |
| - Ethyl alcohol/ethanol and carbon (IV) oxide - Heat 210kg |  Lactic acid  150kg  |

16. - light intensity

 - wavelength/colour/quality of light 

17. a) - Hypermetropia/long sightedness;

 b) - Use of convex lens; accept converging lens/biconvex lens lens

 - To converge the rays so that image is focused on the retina/form a sharp image on the retina

 to form a sharp image in the retina)

 - To refract light rays in order to focus rays sharply on to the retina, 

18. - current continents existed as one large land mass/Pangea/Eurasia / Gond wana Land

 - The present continents drifted leading to isolation oforganism 

 - Organism in each continent evolved along different lines 

 - hence emergence of new species 

19.

b) - Herbivorous  reject herbivore

c) - Lack of canines/incisors on the on the lower jaw/presence of canines / Incisors on the lower jaw

 only 

20. i) has actively dividing cells that give rise to new epidermal cells 

 - Epidermal cells contain Melanin that protects /prevents the skin against ultraviolet rays/UV

 light

 ii) - Secrete sebum, an antiseptic/water repellent substance/prevent drying/cracking of skin/makes skin supple. 

21. a) (Rate of) transpiration 

b) i) – Cut shoot under water

 - Apply petroleum jelly to cork-glass/Bung-glass/Bung-shoot connection 

 - Open reservoir tap

 ii) – To ensure no air enters leafy shoot/xylem 

 - To ensure the apparatus is air tight 

 - To remove air bubbles from tubes 

22. - Protein synthesis 

b) Secretion of substance/enzymes/polysaccharides/glycoprotein /synthesized proteins /synthesized /carbohydrates/synthesized materials

 - Packaging of carbohydrates/proteins/glycoproteins /synthesized material

 - modification of carbohydrates/protein/formation of glycoproteins

 - Transport of carbohydrates/proteins/glycoproteins/lipids/synthesized materials; 

 - Production of lysosomes

23. a) (Allele refers to) alternative form of a gene  (which occupy the cell loci which control the same characteristic)

b) A cross made between a (homozygous) recessive parent and a parent of unknown genotype (to determine whether the unknown genotype in homozygous or heterozygous for dorminant gene

24, **Larmarckian Darwinian**

 -Inheritance of acquired characteristics -Inheritance of genetically acquired characteristics

- Environment induce production of favourable -A characteristics appears spontaneously which is

 characteristics which are inherited then transmitted to the offspring ;

25.a) – Diastase enzyme breaks down/digests/hydrolyses starch to glucose

- Some glucose used to make cellulose (which is incorporated into new cells)

- Some glucose oxidized to release energy used in chemical activities taking place) in the growing tips

b) Ethylene 

26. (a scientific system of ) naming organisms using the generic/genus and specific/species name 

27. – Sorus  reject sori b) – Pteridophyta ;

 ii) – Leaves divided into leaflets known as pinna

 - Presence of sori/spore being structures 

28. i) *Candida albicans* 

ii)  *Vibrio cholerae* 

30. - ATP 

 Accept – Adenosine triphosphate; Reject – small letters i.e atp, Atp, etc.