***SET 1 F4***

BIOLOGY PAPER 1 MARKING SCHEME

1. (a) Taxonomy;

(b) Microbiology

2. (a) Pteridophyta;

(b) Presence of sori; rhizome; fronds;

3. Surface area of leaves; height/length; dry weight / mass

4. (a) Oxygen;

(b) More gas / oxygen produced at PH 9.0 than PH 9.0 4.0; PH 9.0 is optimum / suitable for the activity of catalase;

5. (a) F- cornified layer

G- malpighian layer

(b) H- contracts or relaxes to alter /change the position of the hair on the skin;

J – insulates against heat loss;

6. Bracts;

7.(a) A dog has larger surface area to volume ratio; loses more energy/ heat hence needs more energy to compensate for the loss;

(b) Insufficient oxygen / anaerobic;

8. (a) Incisor;

(b) Chisel shaped;

(c) ( capillaries) supply oxygen and nutrients/ remove waste products;

( never endings) detected stimuli of pain, cold /hot;

9. (a) Dicotyledonae; (1mk)

(b) Centrally placed star shaped Xylem with phloem (alternatively) between the arms of the Xylem;

***(b) is tied to (a) (1mk)***

(c) Numerous/Elongated to increase surface area for absorption of water/minerals/both;

- Thin walled for faster absorption of water/mineral salts/or both;

- Numerous mitochondria to provide energy for absorption of mineral salts;

- Large sap vacuole to create high osmotic pressure; ***Any one correct 1x1 =1mk***

10. (a) Site of photosynthesis;

(b) (i) grana /granum;

(ii) stroma;

11. (a) Process of maintaining constant internal environment of the body cells;

(b) Blood sugar regulation;

Thermoregulation;

Osmoregulation;

12. (a) Deamination; (1mk)

(b) Removal of excess amino acids;

- Availing energy in the body;

- Formation of glycogen/fat for storage;

(any 2 correct 1x2 =2mks)

***(b) is tied to (a)***

13. (a) Photosynthesis;

(b) Carbon (IV) oxide concentration; (the valency power correctly)

Temperature;

Amount of chlorophyll***; (b) is tied to (a)***

(Any two correct 1x2 =2mks)

14. a) Entamoeba histolytica; (rules of Binomial nomeclacture followed) (1mk)

b) (i) Proper (sanitary) disposal of faeces and urine/use of deep pit latrines/flash toilets for disposal of faeces and Urine;

(ii) All drinking water boiled/chemically treated to kill the eggs/miracidia/cercariae;

(iii) People should not bath/swim in water infested with snails;

(iv) People should wear protective shoes/water proof shoes/gumboots when walking in waters infested with snails/swampy areas;

(v) Spray water infested with snails with molluscicides;  ***(Any first three correct 3x1 = 3mks)***

15. (a) Pumps blood at higher pressure to longer distance.

(b) Lignified wall to strengthen / prevent the wall form collapsing;

Pitted wall for lateral movement of water to the adjacent cells;

16. (a) All active sites of enzymes are occupied;

(b) Increasing the concentration of enzymes / adding more enzymes;

17. (a) Capture the organism using appropriate means ; mark with water proof paint, count and

releases; capture again after 48hrs count all, use the formula to estimate the pop;

18. (a) Inability of the pollen grains to fertilize the egg cell of the same plant

19. Produce less toxic waste;

Wastes accumulate slowly;

Some waste are recycled;

20. Beneficial characteristic are retained/ because;

(i) New offspring are identical to the parent;

(ii) Organism matures faster;

(iii) It does not depend on population/fertilization/fruit and seed dispersal;

(iv) New plants obtain nourishment from their parent plant/ hence they can survive temporarily during unstable

environmental conditions;  ***(Any first three correct 3x1 = 3mks)***

21. Water vapour accumulates in stomatal pits making the environment around the stomata humid; this lowers the saturation deficit;(hence less water is lost into the atmosphere)

22. - Transmission of nerve impulse;

- Re- absorption of salts in kidneys;

- Excretion of nitrogenous wastes;

- Absorption of mineral salts by plants

- Translocation of food substances.

- Absorption of food substance in the ileum.

23. Stable / does not dissociate ; reducing oxygen carrying of RBCs;

24. (a) Stomata;

- Cuticle;

- Lenticels;

(b) Air entering has more oxygen and less CO2; while air leaves has more CO2 and less oxygen;

25. Higher conc. Of auxins in the apical bud;

26. (a) P – Nitrogen fixation;

Q – Decomposition /decay;

R - Absorption;

27. a) Prophase I ;(Reject wrong spelling/prophase 1/i)

(b) Recombination of genes; leading to variation; (2mks)

28.Production of eggs/ova;Section of hormones;