FORM FOUR CLUSTER KCSE MODEL 7

BIOLOGY PAPER 1 ANSWERS

1. Lost to the atmosphere through respiration, excretion, defecation and urination.

2. (a). Mesophyll cells

(b). Chloroplast

3. a) To investigate the effect of temperature on the activity of salivary amylase.

(b). To ensure that the contents of each tube attained the temperature of the water Bath.

(c). Tube A-Blue ‑Black

Tube B‑Brown

Tube C ‑Blue black

4.

Dicot leaf	Monocot leaf
-Has apetiole /leaf stalk	-Has a leaf shealth
-Net veined	-Parallel veined
-Broad lamina	-Narrow/slender/long lamina

(Any two first two)

5. -Their box-like/cylindrical shape enables many of them to be packed together for efficient absorption of light.

-They have numerous chloroplasts. Increase SA for absorption of lig

. -The chloroplasts are able to move within the cytoplasm in varying light intensities.

7. -It serves as the motive force for uptake of water up the xylem vessels. -It provides a mechanism through which mineral elements are transported in the plant. -It serves to cool the leaves when the temperature rises above normal.

8. (a). Absorb oxygen.

(b). Absorb carbon (iv) oxide.

(c)Oxygen: 200-168 = 32

$$\frac{32}{200} \times 100 = 16\%$$

Carbon (iv) oxide 168 -160 =8

$$\frac{8}{200} \times 100 = 4\%$$

9. (a).Aves, Reptilia and insecta (all must be correct)

(b). Uric acid is insoluble and non-toxic and therefore requires very little water to eliminate.This helps to conserve water

10. Binary fission.

Budding of sporilation /spore formation.

11. Gene mutation -Albinism,sickle cell anaemia,haemophilia,red-green colour blindness.

Chromosal mutation-Down's syndrone,kleinfelters syndrome

12. (i). Eustachian tube:-Allows an to enter or leave the middle ear so as to equalize the pressure on both sides of the eardrum.

(ii). Semi circular canals:-Have receptors that detect the position of the lead leading to body balance

13. (a). The plumale/shoot bends upwards.

The radical/root bends downwards.

(b). Radicle shows positive geotropism

Plumule shows negative geotropism.

(c). To avoid the stimulus of light

14. At low doses antibiotics will kill those bacteria that are highly susceptible but not

resistant ones; This leaves room for the resistant ones to multiply leading to their build up.

15. One made nucleus fuses with egg cell to form adiploid zygote whereas the other male nucleus fuses with two polar nuclei to form atriploid endosperm nucleus.

16. (a). Sensory neurone.

Reason -cell body lies between axon and Dendron/cell body off the axon.

17. -Activates the enzymes.

-Hydrolypes and dissolves food materials.

-Medium of enzymes activity and transport of dissolved food substances.

-Softens seed coat to allow emergence of the radical.

18. Relaxation of erector pili muscles lowers the hairs on body surface; with no entrapped air,the mammal lose heat readily to the environment,dillation of superficial blood vessel increases blood flow near the skin surface;this increases heat loss from the blood to the environment

19. .(a). Decomposers.

(b). Bacteria and fungi.

20. (a). Bordetella pertusis

(b). Salmovella typhi.

21. Soil erosion/destraction of water catchment/change in rainfall pattern/extraction of plant species/destruction of wild life reserves alteration of a global climate

22. . (a). The extra oxygen required for the formation of ATP necessary for the conversion of of lactic acid to glucose.

(b). Glucose Lactic acid +ATP(energy).

23. (a).To show that light is necessary for photosynthesis.

(b). The exposed parts of leaf a turned Blue - black while the part covered by aluminium foil was

black. Leaf B turned blue -black

24. .(i). Sodium is taken up by diffusion as the movement of ions is as along the concentration gradient /from high concentration to low concentration.

(ii). Iodine is taken up by active transport as the ions move from low to high concentration gradient.

25. (a). Condensation

(b).A- Glucose

B-Fructose

(order does not matter)

(c).Water

26. (a).Cell wall, chloroplasts, sap vacuole.

(b).Cellulose

(c). A -Chloroplast

B- Cell sap/cell vacuole.

27. -Four pairs of legs

-Have no antennal

28. (i).Pivot joint

(ii). Hinge joint