BIOLOGY FORM ONE – FIRST TERM EXAM

1. a.Hydrogen atoms/ions/oxygen/hydroxide/ions/energy; (1mk)

   b.Photolysis (1mk)

2. a.)Crenation (1mk)

   b.Plasmolysis (1mk)

3. i) A – strip becomes longer and stiff (OWTTE)

   D- strips becomes shorter and flexible. (1mk)

   ii) Solution D is hypertonic to the cell; causing the cells to lose their water to the sugar solution by osmosis; making the cells to become flaccid (3mks)

4. a.Diffusion (1mk)

   b.Potassium permanganate ions /particles are at a higher concentration in the visking tubing ; hence they diffuse through the semi permeable visking tubing ; to distilled water

   making the water to turn purple. (3mks)

5. a. High /low temperature;

   -pH

   - Chemical inhibitors

   -substrate concentration

   -enzyme concentration (any 3=3mks)

   b. Active sites; (1mk)

   c .i) it would be denatured (1mk)

   ii) it would be in activated (1mk)

6. a. To show that oxygen is produced during photosynthesis /to investigate the effect of light on photosynthesis /to investigate the gas produced during photosynthesis(1mk)

   b. Concentration of carbon (iv) oxide /temperature /light intensity (1mk)

7. they carry (genetic) information on growth and development of an organism (1mk)
8. a. to allow quick /faster penetration of light (1mk)

   b. to store gases /to allow gaseous exchange (1mk)

   c. for gaseous exchange (1mk)
9. to absorb water and mineral salts (1mk)
10. a group of organs working together for a particular function(1mk)
11. difference in concentration of particles between two regions, Acc.Conc gradient /diffusion gradient

    -temperature

    -Pressure - agitation /shaking

    -size of the particles. - thickness of membrane (3mks)
12. the time when the rate of photosynthesis and respiration balance /when rate of consumption of carbon

    (iv) oxide and its production balance.(1mk)
13. a. Are soluble in water;

    -they form sweet solutions

    - can crystallize (any 2, 2mks)

    b. are a source of energy (1mk)
14. a. Magnification =$\frac{\text{length of drawing}}{\text{length of actual object}}$ (1mk)

    acc.width for length

    b. Magnification = eye piece lens magnification x objective lens magnification (1mk)
15. they do not belong to the same species;
16. –sharing of many features;

    -ability to freely interbreed and produce fertile offspring; (3mks)

17. Starch – add about $2cm^3$ of iodine solution to the test substance; a blue – black colour ; confirm starch present.

    Reducing sugar = add about $2cm^3$ of Benedicts solution to the test substances ;heat to boil; colour changes from due – green- yellow –orange ; confirming presence of reducing sugar;

    (4mks)

18. The greater the surface area to volume ratio; the faster the rate of diffusion(2mks)

19. A.Nucleolus (1mk)

    b.Golgi bodies (1mk)

20. a.Kingdom (1mk)

    b.Species (1mk)

21. a.It is the basic unit of life in an organism; (1mk)

    b.3mm = 3000 micrometers

    $= \frac{3000}{10}$ = 300 micrometers (2mks)

22. a.Monera (1mk)

    b.protoctista/protista (1mk)

    c.Fungi (1mk)

23. a.Night blindness (1mk)

    b.Rickets ; (1mk)

    c.Beriberi (1mk)

24. a.it is long to increase the surface area of absorption of food.

    -it is richly supplied with blood to transport digested food.

-it is coiled to reduce the speed of flow of food and allow it to be fully digested /to occupy a smaller space/give more time for absorption

-has villi to increase surface area of absorption of food.

-it has a thin epithelium to allow faster diffusion of food molecule (1x4=4mks)

b.absorption of water and mineral salts

-synthesis of vitamin K (2mks)

25. a. Dental carriers

-periodontal disease/gingivitis

-pyorrhea (2mks)

b.i. I $\frac{2}{2}$ C $\frac{1}{1}$ Pm $\frac{2}{2}$ M $\frac{3}{3}$ (1mk)

- ii. $\frac{2+1+2+3}{32}$ = 8x2= $\frac{16}{}$

26. a. Necessity of light in photosynthesis (1mk)

b.Test for starch /starch test/starch/starch. (1mk)

c.i)the covered part of the leaf remains brown/yellow /retains the colour of iodine(1mk)

and the uncovered part turns to blue black. (1mk)

ii.Starch was formed in the uncovered part (due to exposure to light) (1mk)

but no starch was formed in the covered part /due to lack of light (1mk)

iii.To destarch the leaf /prevent it from making starch /ensure o starch is in the leaf (1mk)

27. a.Homodant teeth –are of the same shape and size; heterodont teeth are of different shapes and size (2mks)

b. Diastema (1mk)

helps in turning of food /helps to manipulate the food.

Helps to temporary store food (1mk)

28. are closely arranged to increase the surface area for photosynthesis.

-chloroplasts are located on the upper part of the cells facing light

-they have thin walls for faster penetration of light (3mks)

29. a. Movement of particles /ions /molecules from a region of low concentration that of high concentration; and uses energy; acc movement against a conc gradient.

b.presence of oxygen

-presence of glucose

-presence of enzyme

-presence of inhibitors

-temperature

30. a. Raises /lower the body tube (1mk)

regulates the amount of light passing through the condenser (1mk)

c) concentrates light towards the specimen(1mk)

31. Kingdom

Division

Class

Order (4mks)

NB: Stop marking when the order is wrong.