BIO FORM 2 SCHEME

1.Chloroplast ; (1mk)

b) B: (1mk)

c) A – Grana; contain chlorophyll, which traps light energy ,enabling light reaction of

photosynthesis to take place ;

B – Stroma ; contains enzyme, which control dark reactions of photosynthesis; (4mks)

d) They would be absent ; because starch they contain would have been hydrolysis to glucose; (2mks)

2 a) K- eye piece

M-coarse adjustment knob.

b) P-concentrate the light/focuses the light

Q- magnification of the image.

c) i) – N

ii) – Eyepiece magnification X objective lens magnification

d) i) For light to pass through easily;

ii) To make the features more clear and distinguishable;

iii) For cells to remain turgid;

3. (a) K – Root hair cell (2 mks)

L – Endodermis

(b) Elongated to increase area for absorption of water and mineral salts

4.(a) (i) Temporary storage of food

(ii) Secretes digestive enzyme

(iii) Secretes mucus - gastric juice

(iv) Secretes Hcl - Endocrine function i.e. Gastrine hormone

5.i) Ribosomes ✓1

ii) Lysomes ✓1

6.. a) 1mm = 1000μm

Areas = πr2 = 22/7 x ( 2000)2

= (22/7 x 2000 x 2000);

= 125714.29μm2 ; (2mks)

b) 125714.29

5

= 25142.858μm2

7.a) mitochondria;

b ) -has cristae/inner membrane highly folded to increase surface area; for respiration.

-Has matrix medium for respiratory activities; (reject (b) if (a) is wrong.)

-Has matrix medium for respiratory activities; (reject (b) if (a) is wrong.)

8.Sensitive to change in temp; sensitive to changes in PH; has both negative and positive

charges;

9. Length of drawing ;

Length of object

10a) Magnification – Ability of a microscope to enlarge tiny objects

Resolution – Ability of a microscope to separate between two tiny structures under

magnification to appear distinct

b) Mounting – The placing of prepared slide on stage of a microscope;

Staining – Use of chemical stain on specimen for clear observation

11.(a) Golgi bodies/Golgi apparatus;

(b) Lysosome(s):

(c ) Ribosomes;

. 12. (a) Make the sections transparent:

(b) To produce thin sections/ Not to distort the cells:

(c ) To distinguish between different parts/organelles of the cells

13. Diffusion;

Osmosis ;

Active transport ;

14. a) Goiter;

b) Scurvy; -

15.To emulsify fats;

- To provide an alkaline condition for enzyme activities;

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16. Long gut / many chambers to provide large surface area for digestion; bacteria in rumen has

enzyme cellulase which digest cellulose (to glucose/ sugars).

17. Concentrated of the solutions separated by a semi-permeable membrane; existence of

concentration gradient; temperature of the solution;

18. Photolysis – Splitting water into H+ and oxygen gas;

- Synthesis of ATP to be used during dark stage;

- Synthesis of chlorophyll necessary for photosynthesis;

19.- Enzymes amylase digests starch to maltose

- Mucus lubricates food

20. Oxygen-releases to the atmosphere or used by plants for respiration;

Hydrogen-enter dark stage, where it combines with CO2 to form simple sugar;

ATP- provide energy during the combination of hydrogen a toms with CO2in dark stage; -

21Plants are able to synthetize their own food

- Plants are able to use pollination rather rhan moving to seek mating partners

- Use seed and fruits dispersal to colonize new habitats (3x1=3mks)

22.

|  |  |
| --- | --- |
| Monosaccharide | Polysaccharides |
| - Are soluble in water | - Are insoluble in water |
| - Form sweet tasting solution | - Do not have a sweet taste |
| - Reduce Copper(II) ions in benedicts solution to  Copper (I) ions when heated together | - They do not reduce |
| - Are crystalizable | - Are not crystallizable |

23.)intestines relatively long/coiled /folded ;this allows food enough time for absorption.

Intestines long /have villi; to increase the surface area for absorption and digestion ;

The walls have glands which secrete enzymes for digestion;(examples of correct enzymes

e.g. Maltose, sucrose lactose etc).some glands /goblet cells also produce mucus; which protects

The intestinal wall from autodigestion/being digested; and reduce friction;

Intestines have opening of ducts which allows bile pancreatic juice into the lumen;

The intestines have circular and longitudinal muscle, whose contraction and relaxation/peristalsis;

Leads to mixing of food with enzymes/juice; facilitating rapid digestion and help push food along the gut; the intestines are well supplied with blood vessels to supply oxygen/ remove digested food from an efficient absorption and transporting system to move the food away from the small intestines;

Have lacteal vessels for transport of fat/lipid; have thin epithelial lining; to facilitating fast absorption /diffusion;

Note. Allow increases in surface are for absorption only once