FORM TWO TERM ONE EXAMS 2017

BIOLOGY

MARKING SCHEME

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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 = $\pi r^2 = {}^{22}/_{7}$ x (2000)^2
= ($^{22}/_{7}$ x 2000 x 2000);
= 125714.29μm^2 ; (2mks)

b) $\frac{125714.29}{5}$
= 25142.858μm^2

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;
- To provide an alkaline condition for enzyme activities;

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 CO_2 to form simple sugar;
ATP- provide energy during the combination of hydrogen atoms with CO_2in dark stage; -

21Plants are able to synthetize their own food
- Plants are able to use pollination rather than 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