NAME ------------------------------------------------ CLASS ----------------------------------ADM N0 -----------------

GATITU MIXED SECONDARY SCHOOL

BIOLOGY FORM 1 END OF TERM 3 2013 TIME: 2 HRS

1. Name the process (es) of photosynthesis that take place in the following parts of the chloroplast.
2. granum 2mks
3. stroma 2mks
4. Distinguish between competitive enzyme inhibitors. 2mks
5. How does an increase in temperature affect the rate of diffusion? 2mks
6. The figures A and B below show two organelles found in a typical animal cell.
7. Name the organelles 2mks

A:

B:

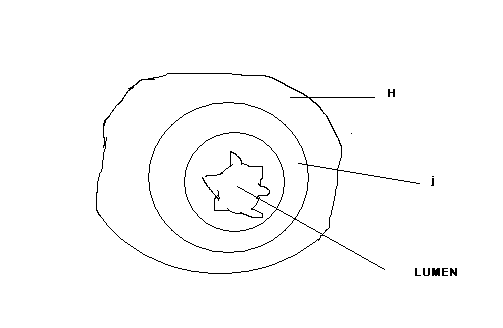
1. Which of the two organelles is found abundantly in a cell that actively secretes enzymes? 1mk
2. Give a reason for your answer (b) (i) above 1mk
3. In a certain investigation, a form 1 student placed a raw Irish potato cylinder in a beaker containing a salt solution. After one hour he observed that the potato cylinder had become firmer and stiffer than at the start of the investigation. Account observation above. 4mks
4. What is classification? 1mk
5. Give three reasons for classifying organisms. 3mks
6. Name the dental disease characterized by the following.
7. The teeth becoming loose as result of infection of the fibres holding the teeth in the sockets. 1mk
8. The gums becoming reddened, bleeding with presence of pus. 1mk
9. The diagram below shows the arrangement of different types
10. Identify the teeth labeled D,E and F 3mks

D:

E:

F:

1. How the tooth is labeled G adapted to its function? 1mk
2. What is the role of the leaf veins in photosynthesis? 2mks
3. Explain the importance of enzymes in cellular reactions. 2mks
4. Below is a diagram showing a transverse section of a part of the alimentary canal



a. Name the part H and J. 2mks

b. Which part of the alimentary canal is the section from? 1mk

c. Describe two structural features in the diagram that adapt the part of the alimentary canal to its functions. 2mks

1. When a piece of liver was placed in a test tube containing hydrogen peroxide solution , effervescence was observed and a colorfulness gas produced.
2. . Name the:

i. Colorfulness gas 1mk

ii. Substance in the liver which reacted with the hydrogen peroxide solution to produce the colourless gas. 1mk

1. Write a chemical equation summarizing the reaction that took place in the test tube. 2mks
2. State two factors that determine the rate of effervescence in this reaction. 2mks
3. Name two animal or plant tissues whose function is described below.
4. Moves dust and bacteria up the trachea 1mk
5. Transports water and mineral salts through the stem. 1mk
6. Carries out photosynthesis in leaves. 1mk
7. Contracts to cause movement. 1mk
8. Define hydrolysis 1mk
9. Using sucrose as an example, write a word equation to illustrate hydrolysis. 1mk
10. Name the part of the mammalian alimentary canal where hydrolysis of sucrose takes place. 1mk
11. State the function of each of the following nutrients in the human body. 4mks

i. vitamin C

ii. Vitamin D

iii. Iodine

iv. Calcium

1. State three functions of the cell sap vacuole. 3mks
2. Explain the role of each of the following in active transport.
   1. oxygen

2mks

* 1. enzymes 1mk

1. A form 1 student was observing onion epidermal cells using a light microscope with an eyepiece lena marked× 10. He counted twenty epidermal cells. He then changed to an objective lens marked x 45.

a. what effect did this change of the objective lens have on the size and number of cells that the student could see? 2mks

i. Effect on the size. 2mks

ii. Effect on the number.

b. The student observed that the image of the cells was blurred. which p[art of the microscope would he adjust so as to obtain a sharp image? 1mk

**SECTION B (40 MKS)**

**ANSWER ALL THE QUESTION IN THIS SECTION**

2. In the table below, the statements about food tests may be true or false. Indicate in the spaces provided, that which is true with a (tick) and that which is false with a (
3. x).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| statement | Starch | Reducing sugars | protein | lipids |
| Heating is required |  |  |  |  |
| Positive result of test is contents turning blue black |  |  |  |  |
| The substance being tested is a carbohydrate |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. In which of these tests might a green colour be seen at some stage? 1mk
2. If the final result is green, what would this indicate? 1mk
3. An investigation on the process of photosynthesis was set up as shown in the diagram below.
4. State two aspects of photosynthesis that can be investigated using the set up above. 2mks
5. Describe two ways by which the rate of photosynthesis may be determined. 2mks

i. Describe the effect of moving the lamp nearer the apparatus on the rate of bubbles production. 1mk

1. explain your answer in (c ) (i) above 3mks
2. Cylinders cut from potato tuber, change mass when placed in solutions of different concentrations. A student weighed four potato cylinders. He placed one cylinder in distilled them again. The results were as shown in the table below

|  |  |  |  |
| --- | --- | --- | --- |
| solution | Original mass in grams | Final mass in grams | Change in mass |
| Distilled water | 2.80 | 2.87 |  |
| 1% sodium chloride | 2.75 | 2.80 | 0.05 increase |
| 10% sodium chloride | 2.82 | 2.81 | 0.01 decrease |
| 20% sodium chloride | 2.71 | 2.63 | 0.08 decrease |

a.

i. complete the table by calculating the change in mass in grams for the potato cylinder placed in distilled water. 1mk

ii. Calculate this change in (a) (i) above as a percentage of the original mass. Show your working 2mks

iii. Why is it better to compare percentage change in mass rather than change of mass in grams? 1MK

b. Explain why the potato cylinder in 1% sodium chloride solution gained mass. 2mks

c. Which concentration of sodium chloride is most similar to the concentration of the cell sap in the potato cells? Explain your answer. 2mks

1. Describe how green plant nutrition differs from animal nutrition. 4mks
2. Describe and explain what would happen to a piece of bread and margarine from when it is first eaten to when its digested molecules are absorbed into the blood. In your answer refer only to the digestion of starch and lipid. 12mks