**NAME ------------------------------------------------ CLASS ---------------ADM NO. -------------------**

**GATITU MIXED SECONDARY SCHOOL**

**BIOLOGY 231/1**

**FORM 3RD TERM 2013**

**TIME: 2HRS.**

**Instructions**

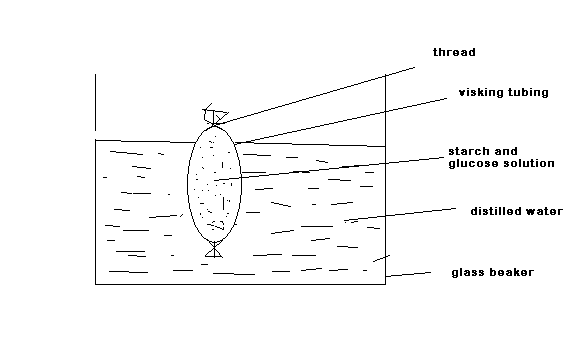
* **Answer all the questions in the spaces provided**

1. state the functions of the following part of a microscope 1mk
2. base
3. limb/arm 1mk
4. Name two regions in the human alimentary canal where starch is digested 2mks
5. Why is it necessary that blood from the digestive system pass through the liver before entering the general circulation? 1mk
6. Why are xylem vessels more efficient in transportation of water than tracheids? 2mks
7. Explain why taking an under dose of antibiotics may lead to build up of a population of resistant bacteria. 2mks
8. The figure below shows a single pair of homologous chromosomes at two stages of meiosis.
9. Name the stages A and B 2mks
10. Describe the differences between the two stages A and B 1mk
11. State two functions of thrombokinase enzyme in blood clotting. 2mks
12. State two factors that should be consired when determining intervals in both line and belt transect. 2mks
13. Name a disease that can be prevented by efficient sewage disposal. 1mk
14. Explain three events in mitosis that ensure number of chromosomes in daughter cells remain the same as in parent cell 3mks
15. Define the following terms
16. Instar 1mk
17. Apical dominance 1mk
18. Explain what happens during pupa phase of metamorphosis. 2mks
19. state the function of the carnassials teeth 1mk
20. Name the spore producing structures in:
21. pteridophyta 1mk
22. Bryophyta 1mk
23. Explain why a rat has a higher food intake compared to a lizard of the same body weight. 2mks
24. Name the part of the chloroplast where the following process occur.

a. photolysis 1mk

b. carbon (IV) oxide fixation 1mk

1. Name the raw material used in photolysis 1mk
2. Explain how an increase in temperature leads to an increase in photosynthesis. 2mks
3. Give two disadvantages of external fertilization 2mks
4. What is the function of Acrosome in a sperm? 1mk
5. An experiment to investigate a certain process was set up as shown below.



Test for starch and reducing sugars were carried out at the start of experiment and after 20 minutes on a sample obtained from the beaker.

|  |  |  |
| --- | --- | --- |
|  | Start of experiments | After 20 minutes |
| starch | absent | Absent |
| Reducing sugar | Absent | present |

1. Explain the presence of glucose in the beaker after 20 minutes 1mk
2. Identify the colour of the reagent used in testing for reducing sugars. 1mk
3. Name the portions of the human nephron found in the cortex of the kidney. 3mks
4. Distinguish between active and passive immunity 2mks
5. Give two characteristics of heart muscles which distinguish them from other types of muscles. 2mks
6. Using simple diagrams differentiate between marginal and parietal placentation 2mks
7. Air is forced into the lungs when the pressure in the thoracic cavity falls below atmospheric pressure. How is this fall in pressure brought about? 4mks
8. Name the plant hormone that:
9. stimulate formation of the callus tissue 1mk
10. causes closing of stomata in high concentration 1mk
11. Identify the biological representation by the diagram below. Name it
12. state its function 1mk
13. Explain how the following organelles are adapted to their function
14. smooth endoplasmic reticulum 1mk
15. vacuole 2mks
16. Explain how budding occurs in yeast cells. 4mks
17. Explain how the following factors increase the rate of active transport
18. Glucose concentration 2mks
19. Temperature 2mks
20. state the role of each of the following substances present in saliva during food digestion

a. mucus 1mk

b. water 1mk

c. ptyalin 1mk

1. Explain why food in living cells is stored in an insoluble form 2mks
2. Osmosis is regarded as a special type of diffusion. Explain. 2mks
3. Name the appropriate enzymes required for the process below to take place.
4. sucrose + water → fructose + glucose 1mk
5. lipid + water → fatty acids + glycerol 1mk
6. starch + water → maltose 1mk