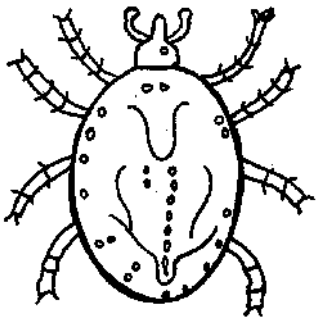
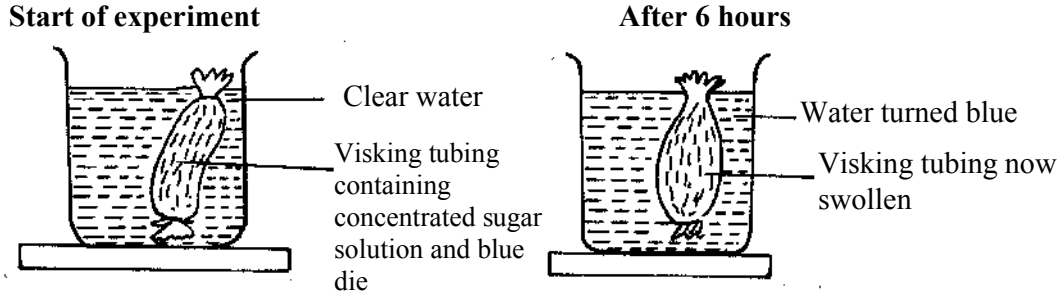
231/1
BIOLOGY

1. State two functions of the mammalian ear. (2mks) * *Nym**
2. State two factors, which determine energy requirements in humans. (2mks) * *Nym**
3. The figure below represents an organism

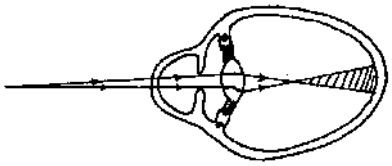


(a) Name the phylum and class to which it belongs. (2mks) * *Nym**
Phylum ……..
Class…….
(b) State two observable features that are used to place.the organism in the class in (a) above. (2mks) * *Nym**

4. Give **two** functions of calcium in the human body. (2mks) * *Nym**
5. Suggest a method that can be used to estimate fish population in a pond. (1mk) * *Nym**
(b) State **two** adaptive feature in a fish that prevent it from predation by birds.(2mks). * *Nym**
6. List **three** evidences of organic evolution. (5mks) * *Nym**
7. State function of the following materials found at the joints.
(a) Synovial Fluids (1mk) * *Nym**
(b) Cartilage (1mk) * *Nym**
8. State one significant advantage that homoithermic animals have over poikilothermic animals. (1mk) * *Nym**
9. An experiment was set up using visking tubing, which was filled with concentrated sugar solution. The free ends were tightly tied to prevent leakage. It was immersed in a beaker containing distilled water. After six hours the observations were made.

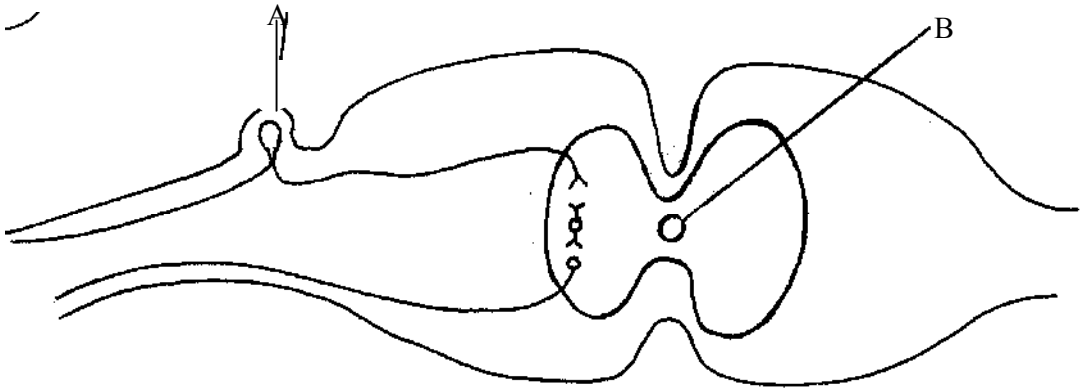


(a) Why did the visking tubing become swollen as shown in after 6 hours. (1mk) * *Nym**
(b) By what physiological process did the water in the beaker turn blue? (1mk) * *Nym**
10. Give the theory advanced by Charles Darwin to explain the origin of species.(1mk) * *Nym**
11. The illustration below shows a human eye that is defective.



(a) Identify the eye defect. (1mk) * *Nym**
(b) How would this defect be corrected? (1mk) * *Nym**

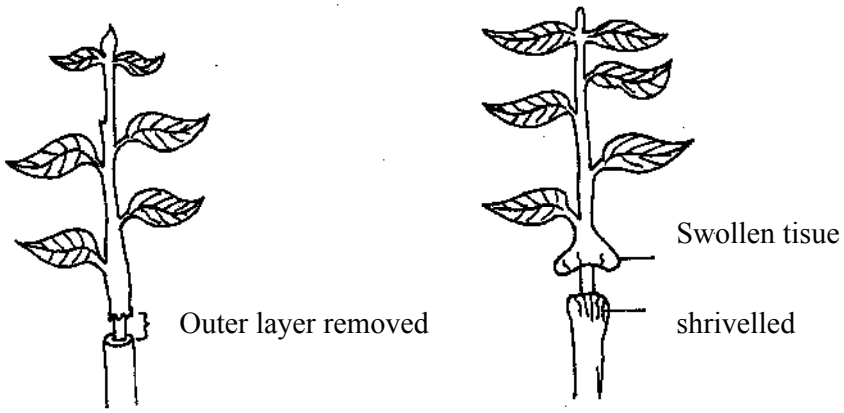
12. State three functions of the endoskeleton (3mks) * *Nym* *
13. What is a test cross? (1mk) * *Nym* *
14. (a) Name the part of the brain that controls thermoregulation in humans. (1mk) * *Nym* *
(b) Below is a cross section of the human spiral cord.



(i) State the function of the parts labelled A and B. (2mks) * *Nym* *
(ii) State two functions of a spinal cord. (2mks) * *Nym* *

15. An animal has the following dental formula,
I = $^{0}/_{2}$, C = $^{0}/_{2}$, PM = $^{3}/_{3}$ M = $^{2}/_{3}$
(a) Suggest the type of diet for this animal. (1mk) * *Nym* *
(b) Give a reason for your answer in (a) above. (1mk) * *Nym* *
(c) How many teeth does the animal have in total? (1mk) * *Nym* *
16. State the importance of the hydrochloric acid that is secreted in the stomach.(1mk) * *Nym* *
17. Blowfly maggots (larvae) quickly burrow into decaying faecal matter as soon as they are exposed to light.
(a) Name the type of response exhibited by the maggots. (1mk). * *Nym* *
(b) Of what value is such a response? (1mk) * *Nym* *
18. Define the following terms. (3mks) * *Nym* *
(a) Biomass * *Nym* *
(b) Ecosystem. * *Nym* *
(c)Carrying Capacity * *Nym* *
19. State two adaptation of red blood cells which make them efficient in their functions. (2mks) * *Nym* *
20. The figures below show an experiment that was carried out by form two students of Mitini secondary school.

A Day 1 of experiment **B 30 days after setting the experiment.**



(a) What was the aim of this experiment? (1mk) * *Nym* *
(b) Explain the observations on the stem after 30 days. (1mk) * *Nym* *
(c) Suggest what may happen to the plant after a long time. (2mks) * *Nym* *
21. List the changes that take place during inhalation in the breathing cycle of a mammal in the following: (4mks) * *Nym* *

(a) Rib cage thoracic cavity* *Nym**
(b) Diaphragm* *Nym**
(c) External intercostals muscles* *Nym**
(d) Internal intercostals muscles* *Nym**

22. Distinguish between (i) continuous and discontinuous variation (1mk) * *Nym**

Continuous	discontinuous

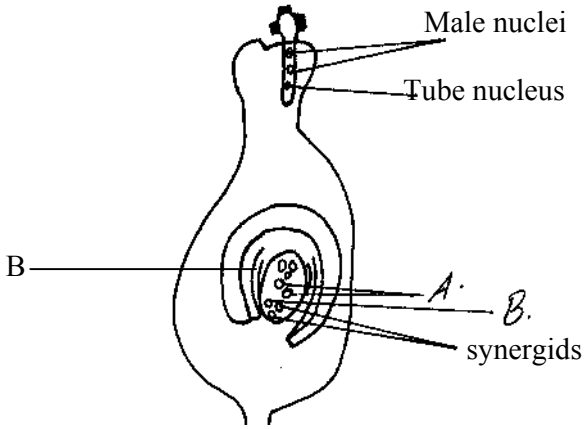
(ii) Complete and incomplete metamorphosis. (1mk) * *Nym**

Complete	incomplete

(b) The following organisms were found in a certain habitat Water snail, protozoa, Kingfisher, mosquito larvae, phytoplankton, fish and waterweeds.
In the table below place the organisms in their respective trophic levels. (3mks) * *Nym**

Trophic level	Organisms
Producers	
Primary consumers	
Secondary consumers	

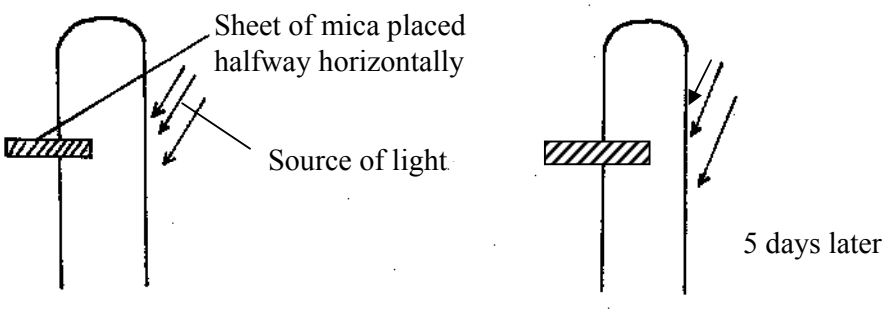
23. State two processes used by plants for excretion. (2mks) * *Nym**
24. State two internal factors in seeds that cause dormancy. (2mks) * *Nym**
25. The figure below shows some stage of development in the life of a plant.



(a) State the fate of A and B after fertilization. (2mks) * *Nym**
(b) What name is given to this type of fertilization? (1mk) * *Nym**
26. a) Name two end products of light of photosynthesis (2mks) * *Nym**
b) State two aspects of light that may affect the process of stage of photosynthesis. (2mks) * *Nym**
27. State three homeostatic functions of the liver. (3mks) * *Nym**
28. Below are some parts of a male reproductive system; state how they are adapted to their functions. (3mks) * *Nym**
(i) Testis* *Nym**
(ii) Vas deferens* *Nym**
(iii) Epididymis * *Nym**
29. State two ways through which herbaceous plants achieve support. (2mks) * *Nym**
30. Name the excretory organs in the following organisms. (2mks) * *Nym**

Organism	Tissue / organ used.
Birds	
Insects	

31. The experiment below was carried out by form four students. The result was recorded below:



Explain why the shoot doesn't bend towards the light. (2mks) * *Nym* *