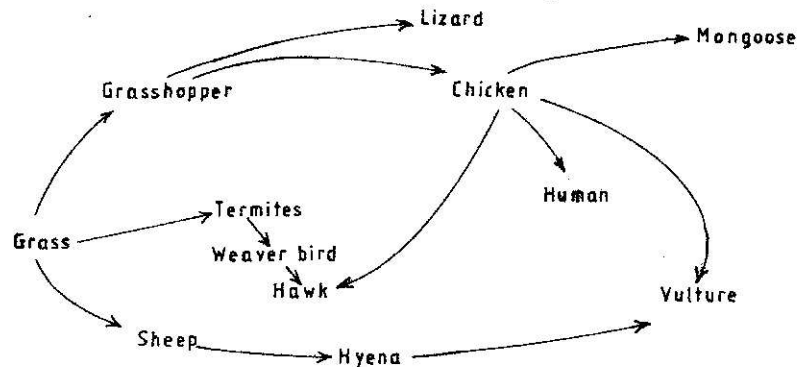


2.1 BIOLOGY (231)

2.1.1 Biology Paper 1 (231/1)

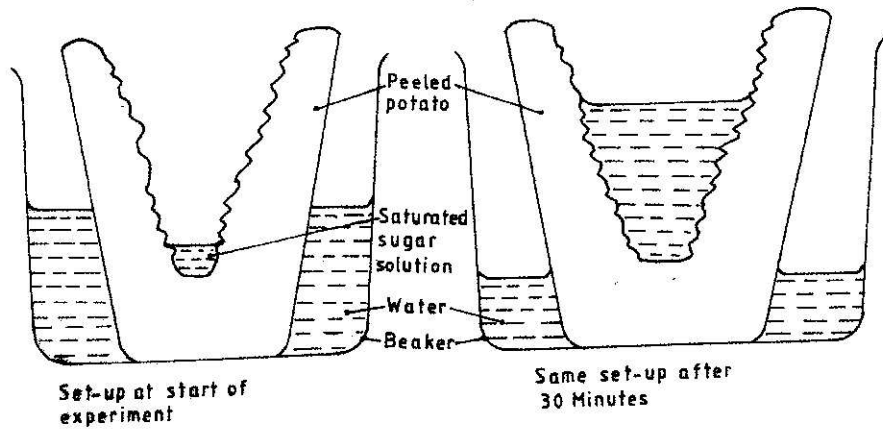
- 1 Name **two** kidney diseases. (2 marks)
- 2 (a) Write the dental formula of an adult human. (1 mark)
(b) Name **two** dental diseases. (2 marks)
- 3 Give **three** reasons for classifying organisms. (3 marks)
- 4 State **one** use for each of the following apparatus in the study of living organisms.
(a) Pooter. (1 mark)
- 5 The figure below illustrates a food web in a certain ecosystem.



From the food web:

- (a) draw the shortest food chain; (1 mark)
 - (b) identify the organisms with the highest
(i) number of predators; (1 mark)
(ii) biomass. (1 mark)
- 6 What is meant by the following terms?
(a) Ecology. (1 mark)
(b) Carrying capacity. (1 mark)

- 7 The diagrams below show an experimental set-up to investigate a certain process in a plant tissue.



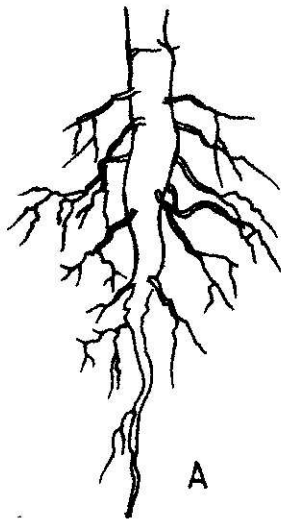
Explain the results obtained after 30 minutes.

(4 marks)

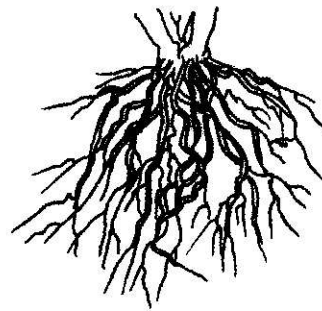
- 8 State **three** characteristics of the class crustacea.

(3 marks)

- 9 The diagrams below illustrate the organs of some flowering plants.



A



B

State the classes of plants to which each belong.

(2 marks)

A

B

- 10 (a) Give **two** differences in the products of anaerobic respiration between plants and animals.

(2 marks)

- (b) Name the site of anaerobic respiration in a cell.

(1 mark)

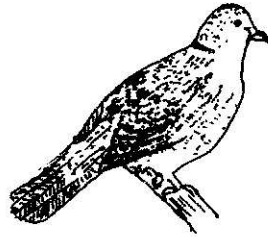
- 11 State the functions of the following parts of a light microscope.

Fine adjustment knob.

Stage.

(2 marks)

12 The diagram below represents a certain organism.



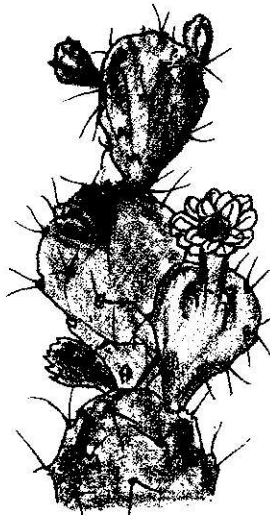
State the phylum and class to which it belongs. (2 marks)

Phylum

Class

13 State **two** functions of carbohydrates in the human body. (2 marks)

14 The diagram below represents a certain plant.



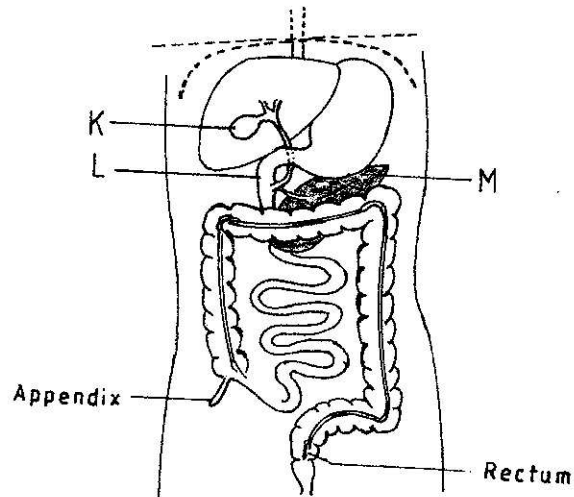
- (a) What is the likely habitat for the plant? (1 mark)
- (b) Give **two** reasons for your answer in (a) above. (2 marks)

15 Give reasons for carrying out the following procedures when preparing temporary wet mounts of plant tissues.

- (a) Making thin plant sections. (1 mark)
- (b) Adding water on the plant section. (1 mark)
- (c) Placing a cover slip over the plant section. (1 mark)

- 16 (a) Describe the condition known as varicose veins. (2 marks)
- (b) What is the role of blood platelets in the blood clotting process? (2 marks)

- 17 The diagram below represents part of the human digestive system.

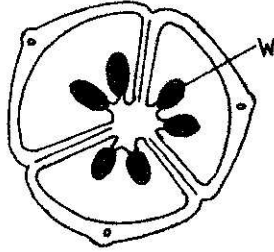


- (a) Name the organs labelled L and M. (2 marks)
- L
- M
- (b) (i) Name the substance produced by the organ labelled K. (1 mark)
-
- (ii) State the function of the substance named in b(i) above. (1 mark)
- 18 (a) Name **one** salivary gland in humans. (1 mark)
- (b) State **two** functions of saliva. (2 marks)
- 19 (a) Apart from the lungs, name **two** gaseous exchange surfaces in a frog. (2 marks)
- (b) Write an equation that summarises the process of aerobic respiration. (1 mark)
- 20 The number of stomata on the lower and upper surfaces of two leaves from plant species X and Y were counted under the field of view of a light microscope. The results were as shown in the table below.

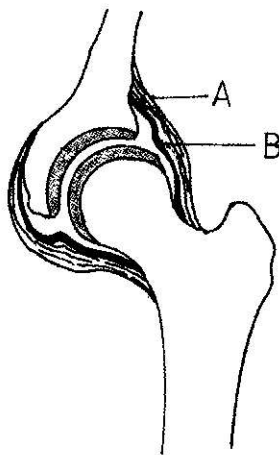
Leaf	Number of stomata	
	Upper surface	Lower surface
X	4	12
Y	20	23

- (a) Which of the two leaves would be expected to have a lower rate of transpiration? (1 mark)
- (b) Give a reason for your answer in (a) above. (1 mark)
- 21 (a) What is meant by convergent evolution? (1 mark)
- (b) State **two** limitations of fossils as an evidence of evolution. (2 marks)

- 22 State the difference in content of oxygen and carbon (IV) oxide in the air that enters and leaves the human lungs. (2 marks)
- 23 The diagram below represents a transverse section of an ovary from a certain flower.



- (a) (i) Name the structure labelled W. (1 mark)
- (ii) Name the type of placentation illustrated in this diagram. (1 mark)
-
- (b) Give an example of a plant whose flowers have the type of placentation named in (a)(ii) above. (1 mark)
- 24 (a) Differentiate between the following terms:
- (i) dominant gene and recessive gene; (1 mark)
- (ii) continuous variation and discontinuous variation. (1 mark)
- (b) What would be the expected results from a test cross? (2 marks)
- 25 State **one** economic importance of each of the following plant excretory products. (3 marks)
- (a) Tannin.
- (b) Quinine.
- (c) Caffeine.
- 26 Name the gamete cells that are produced by the ovaries. (1 mark)
- 27 The diagram below represents features of a joint in a mammal.



- (a) Name the part labelled A. (1 mark)

- (b) State the function of the part labelled B. (1 mark)
- 28 (a) What is a tropic response? (1 mark)
- (b) State **two** ways by which auxins regulate growth in seedlings. (2 marks)
- 29 State **four** reasons why water is significant in seed germination. (4 marks)