

**GIANCHERE FRIENDS SEC SCHOOL  
FORM TWO BIOLOGY SERIES EXAMINATIONS  
TERM TWO 2021**

**(SECTION A 60 MARKS)**

**Answer all questions in section A**

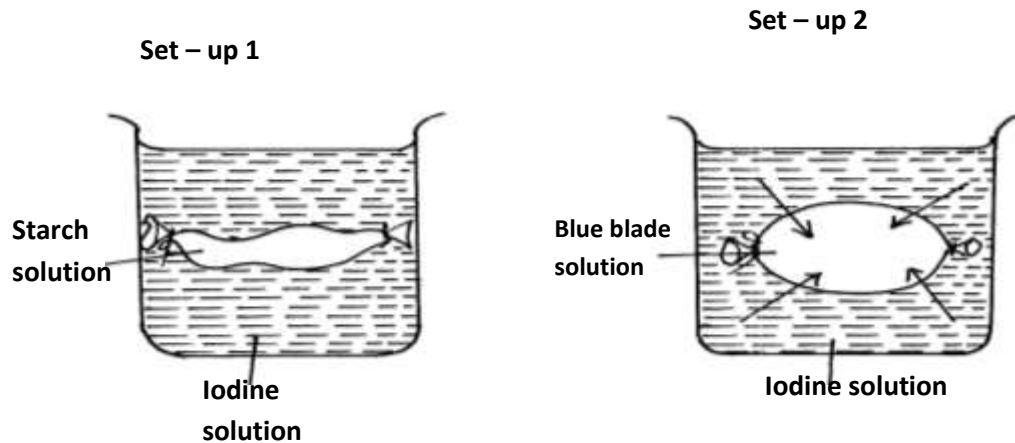
1. Name **two** sites of gaseous exchange in amphibians. (2mks)

2. Name **three** forces that maintain transpiration stream. (3mks)

3. Name a support tissue in plants that is thickened with cellulose. (1mk)

4. A group of students from Awasi Boys High School set up an experiment to demonstrate a certain

process. The experimental set up were as shown in the diagrams below.



After 10 minutes the students recorded their observation in a table as shown below.

	Observation	
	Inside the tube	Outside the tube
I	Blue black color	No color change
II	No colour change	Blue black colour

a) Name the process being demonstrated by this experiment. (1mk)

b) Explain the result in the experiment set up I. (3mks)

5.State **four** ways in which the red blood cells are adapted to their function. (4mks)

6.State the aspects of light that affect the rate of photosynthesis. (2mks)

7.a)A certain animal has no incisors, no canines, 6 premolars and 6 molars in its upper jaw. It has 6 incisors, 2 canines, 6 premolars and 6 molars on the lower jaw. Write its dental formula. (1mk)

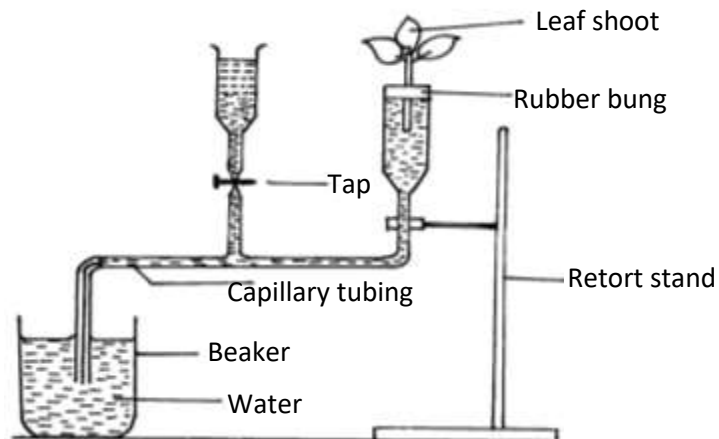
b) State the likely mode of feeding for the animal. (1mk)

c) Give a reason for your answer in (b) above. (1mk)

8.a) Name the structures in phloem that are involved in the translocation of sugars. (2mks)

b) Other than sugars, name **two** compounds that are translocated in the phloem. (2mks)

9. A set up that was used to investigate a certain process in plants as shown in the diagram below.



a) What process was being investigated? (1mk)

b)i) State **two** precautions that should be taken when setting up the experiment. (2mks)

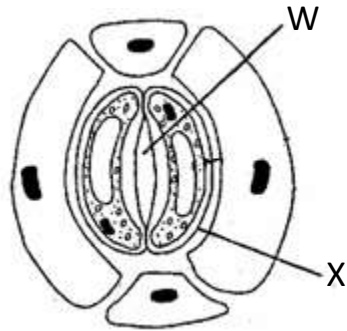
ii) Give a reason for each precaution stated in b(i) above. (2mks)

10. State the functions of;

a) Ribosomes (1mk)

b) Golgi apparatus (2mks)

11. The diagram **below** shows part of plant tissue.



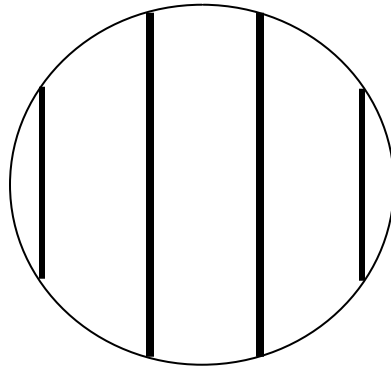
(a) Name cell labelled **X** and part labelled **W**.  
(2marks)

**X** -

**W** -

(b) State **two** adaptations of cell labelled **X** to its function.

12.A form one student trying to estimate the size of onion cells observed the following on the microscope's field of view.



(a) Define the term resolving power.

(1 mark)

(b) If the student counted 20 cells across the field of view calculate the size of one cell in micrometers.

(2 marks)

13. Name **two** major branches of Biology.

(2marks)

14.(a) State the functions of the following apparatus.

(i) Bait trap.

(1mark)

(ii) Pooter.

(1 mark)

15. State **two** structural adaptations of veins to their function.

(2 marks)

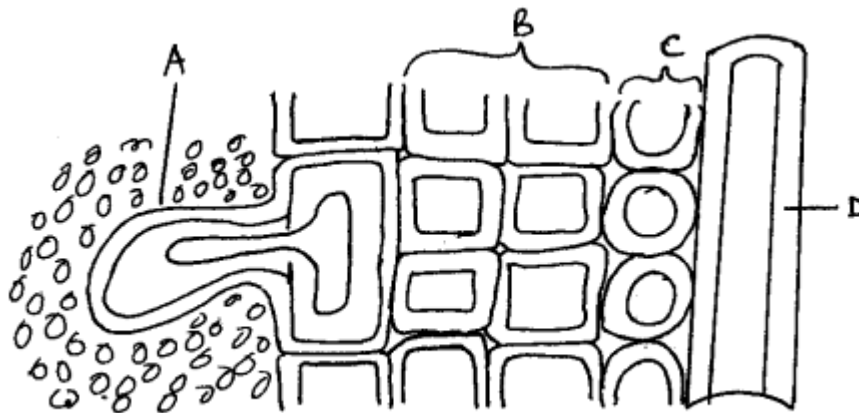
15. Name the process that results to formation of tissue fluid.

(1 mark)

16. What is serum?

(1mark)

17. The diagram **below** shows part of a longitudinal section of a young root.



(a) Name the parts labelled **A, B, C** and **D**.

(4 marks)

A-

B-

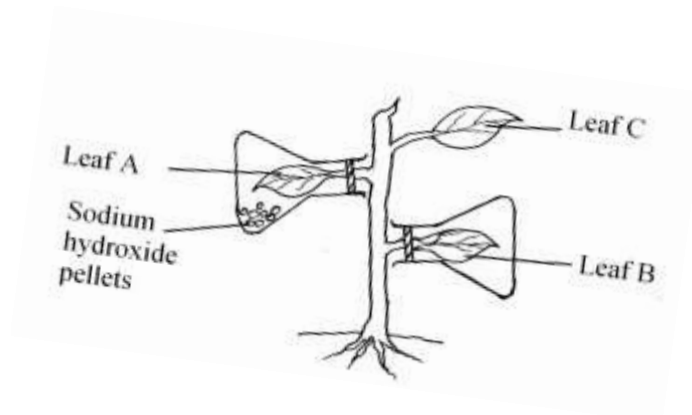
C-

D-

(b) State the function of the part labeled **A**. (1 mark)

(c) How is the tissue labelled **D** adapted to its function. (3 marks)

18 The diagram below represents an experimental set up to investigate a certain scientific concept. The potted plant was first destarched by keeping it in dark for four days.



The set up was then placed in sunlight for five hours and leaves were tested for starch.

a) What scientific concept was being investigated? (1mk)

b) i) Give the results likely to be obtained after starch test for A and B. A and B.

A ..... (1mk)

B ..... (1mk)

ii) Account for the results in leaf A in b (i) above. (1mk)

c) Why was leaf C included in the set-up? (1mk)

19a) Explain the importance of transport in plants.

(2mk)

b) What is the role of root hairs in plants?

(1mk)

20. Explain the events of the light stage of photosynthesis.

(3mk)

**SECTION B- (40MRKS)**

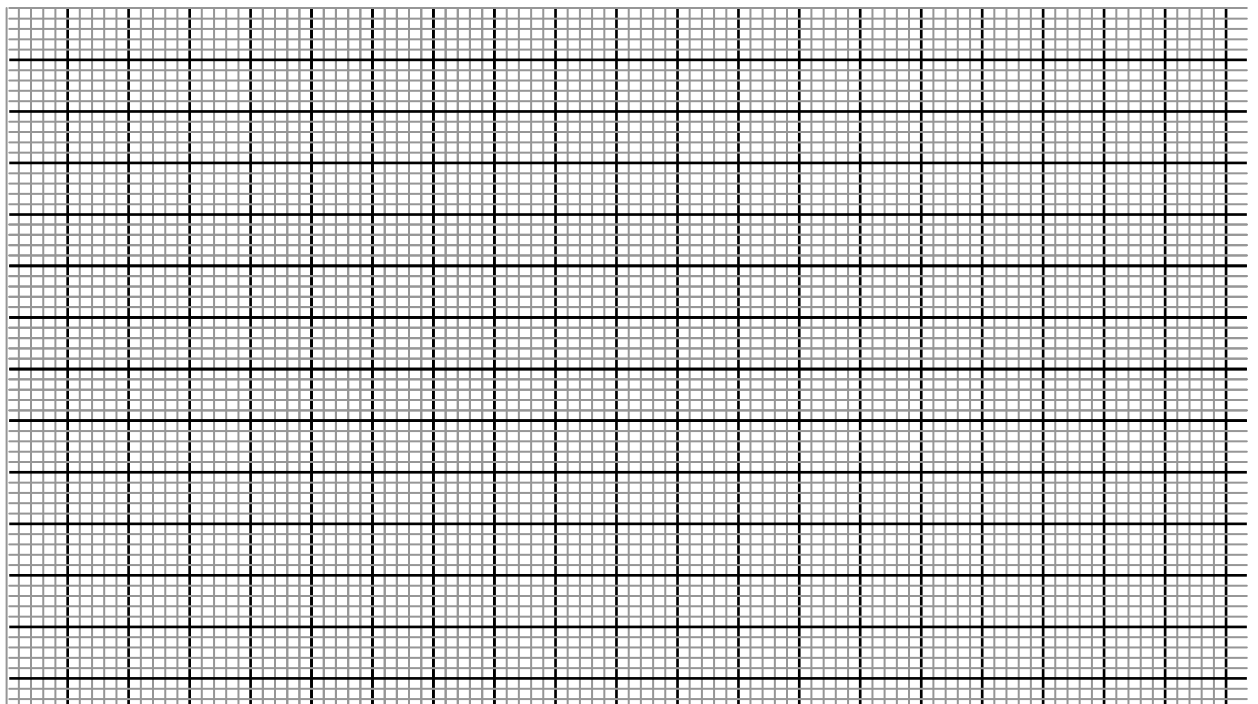
*Answer questions 21(compulsory) and either 22 or 23 in the spaces after question 8.*

21. An experiment was set up to investigate the effect of light on the rate of photosynthesis in the shoot of a water weed. The shoot was immersed in a 2% sodium hydrogen carbonate solution. The gas given off by the shoot was collected for five minutes at different light intensities and the volume measured. The results obtained are shown in the table below.

Light intensity(arb units)	1	2	3	5	10	20	30	40	50
Gas collected (cm <sup>3</sup> /5minutes)	0.35	0.6	0.85	1.20	1.55	1.70	1.80	1.79	1.79

Using the data given in the table, plot a graph of volume of the gas collected against the light intensity

(6mrks)



b) Account for the rate of gas production in the following intervals of light intensity.

i) 1 - 10 (2mrks)

ii) 30 - 50 (2mrks)

c) What is the use of sodium hydrogen carbonate in this experiment. (1mrk)

d) State the products of light stage of photosynthesis. (2mrks)

e) State the functions of each of the products of the dark stage of photosynthesis in man.(3mrks)

f) Why are plants referred to as producers in an ecosystem. (2mrks)

(g) Other than light intensity, name **two** other factors that affect the rate of photosynthesis (2mrks)

22.(a) Discuss factors that affect the rate of photosynthesis. (8 mks)

(b) Discuss the environmental factors that affect the rate of transpiration. (12mks)

23.Describe the structural adaptations of the mammalian heart to its functions. (20 mks)

**END\***