

P530/2
BIOLOGY
Paper 2
02nd Aug. 2022
3 Hours



KAMPALA WAKISO GIANT SCHOOLS' ASSOCIATION (KWGSA)

National Joint Mock Examination 2022

Uganda Advanced Certificate of Education

BIOLOGY THEORY

Paper 2

3 Hours

INSTRUCTIONS TO CANDIDATES

*This paper consists of **two** sections **A** and **B***

*Answer **all** questions in section **A** and any **three** questions in Section **B***

*All questions in section **B** carry equal marks*

SECTION A

1. The table 1 below shows contents of minerals in sea water, river water and dry matter of brown marine algae. Study it and answer the questions that follow.

Elements	Sea water	River water	Dry matter of marine brown algae
Sodium	10500	6.30	33000
Calcium	1350	4.10	5200
Potassium	380	2.30	52000
Iron	0.01	0.67	700
Strontium	8.00	0.08	1400
Manganese	0.002	0.012	5500
Silicon	3.00	6.50	1500
Chlorine	19000	7.80	4700
Sulphur	885	3.70	12000
Bromine	6500	0.021	740
Boron	460	0.013	120
Fluorine	1.30	0.09	450
Nitrogen	0.50	0.23	15000
Phosphorus	0.07	0.005	2800

- (a) Comment briefly on the relative concentration of the mineral elements in the river water and sea water. (07 marks)
- (b) Explain the above differences in concentration of elements in the two water bodies. (09 marks)
- (c) (i) Comment briefly on the differences in mineral concentration between sea water and marine brown algae. (03 marks)
- (ii) Explain what could have caused the above differences in c(i) above. (03 marks)
- (d) Suggest why some minerals are more concentrated in the brown algae than others. (06 marks)
- (e) What is the source of mineral elements found in sea water? (05 marks)
- (f) Suggest the possible ways in which terrestrial ecosystems obtain minerals. (07 marks)

SECTION B

Answer any three questions

2. (a) How are plants living under canopy forest trees able to survive? (10 marks)
- (b) Explain how light may affect the activity of organism. (10 marks)
3. (a) Explain why animals breath where as plants do not breathe. (05 marks)

- (b) State the adaptations of living systems to their function of gaseous exchange. (11 marks)
- (c) Outline the non-respiratory functions of the lung respiratory system. (04 marks)
- 4. Explain what happens to an individual having a mal-functioning liver. (20 marks)
- 5. (a) Explain what is meant by sex linked and sex limited traits. (05 marks)
- (b) Giving examples, discuss the inheritance of sex linked and autosomal traits. (10 marks)
- (c) Explain using named examples why many sex linked diseases occur frequently in males than in females. (05 marks)
- 6. (a) Describe the adaptations of each of the following organisms to obtain and ingest their food materials.
 - (i) Herbivorous mammals. (06 marks)
 - (ii) Carnivorous mammals. (07 marks)
- (b) Explain why milk can not sustain a healthy development of an infant. (07 marks)

END