

AITEL EXAMINATION

UGANDA CERTIFICATE OF LOWER CURRICULUM EDUCATION

S3 BIOLOGY

Paper 1

END OF YEAR EXAMINATION

2 hours

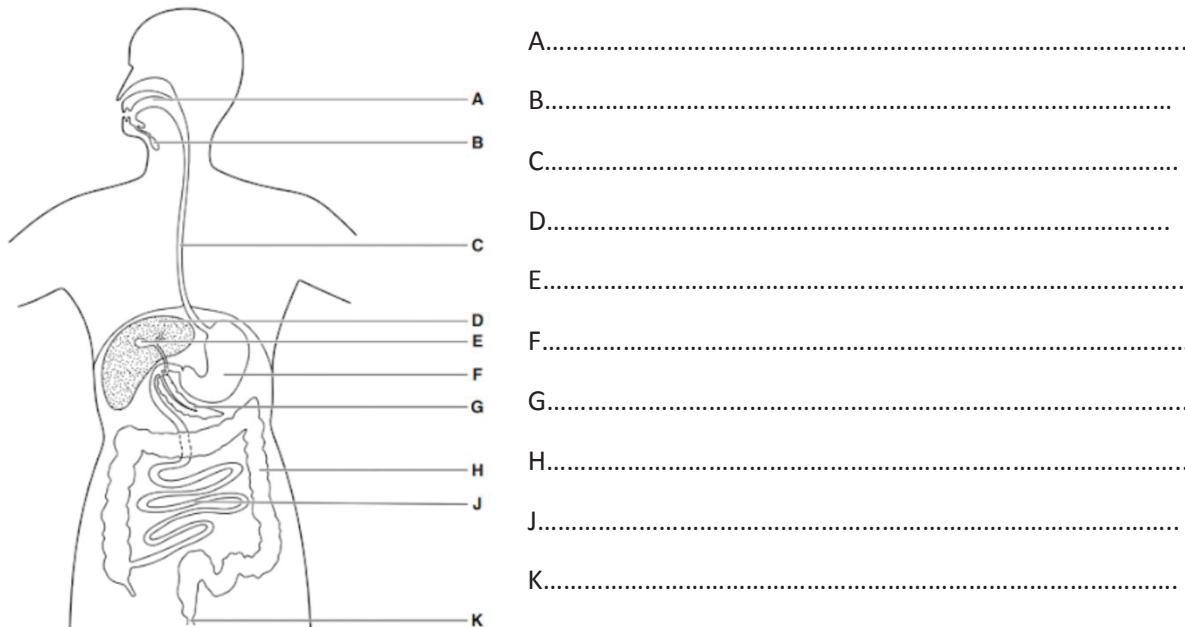
INSTRUCTIONS TO LEARNERS

- Answer all questions in section A and chose one question from section B
- Answers to section A should be written in the spaces provided and those to section C should be written to answer booklets provided
- Any other rough papers added will not be marked.
- Expression of relevant but outstanding ideas in for section B may earn you're an exceptional score.

SECTION A (60 Scores)

1. Digestion refers to the process by which food is broken down into particles small enough to be absorbed by the body. The figure below was a scan through the human alimentary canal.

a) Name the parts labelled A to K (05 scores)



- A.....
B.....
C.....
D.....
E.....
F.....
G.....
H.....
J.....
K.....

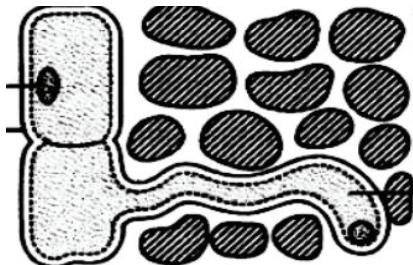
- b) A Patient had a cancer that required removal of part G. Briefly describe how the digestion process in that patient will be affected. (03marks).

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- c) Another student is having challenge on deciding on whether to sell off her gall bladder for shs1.5M. Advise her on the diet she will miss to enjoy just for the love of money with a reason. (02 Scores)

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2. In analyzing plant structures, students found out numerous hair-like projections from the root. They took the plant to the laboratory and had the sketch below



for one of them.

These little kids had been given task to state the adaptations for some specialized plant cells and their functions but they hadn't seen one of a kind shown on the side. Guide them on achieving their task.

Task.

- i. Name of the fine structures.

(1 score)

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- ii. Function

(1 score)

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- iii. Any three adaptations to function

(3 scores)

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- iv. On pouring salt solution in the soil particles around some plants like those shown in black around the extensions, some plants are observed to wilt and later dry. Use arrows on the drawing above to show how

materials move to cause drying. In the space below, briefly describe what causes drying in such plants. (05 scores)

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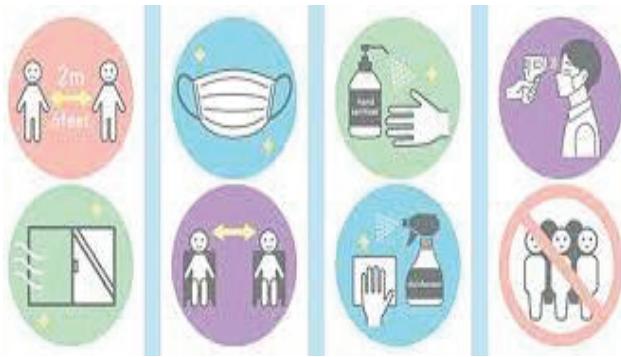
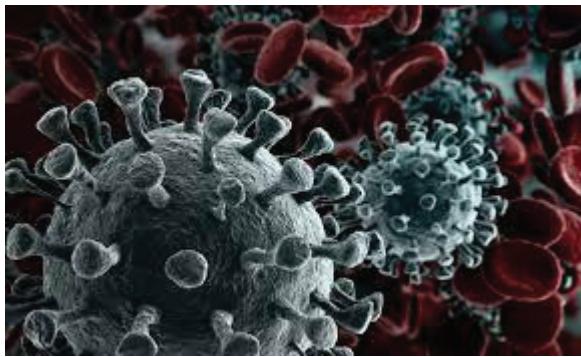
3. The following data was obtained from an experiment on the effect of light intensity on the rate of photosynthesis.

Number of bubbles per minute	15	10	6	4	2	1
Distance in cm of the test tube from the light source	10	20	40	60	80	100

- a. Draw a line graph to represent the data above (06 scores)
b. Using the graph, explain the relationship between light intensity and the rate of photosynthesis. (04 scores)

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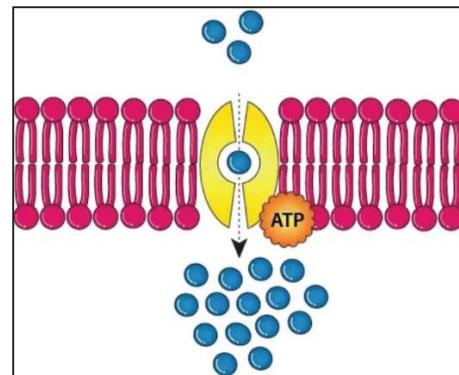
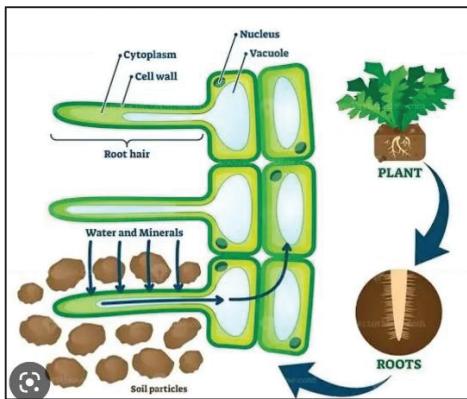
4. In a 2019, a global pandemic broke up and affected almost every country in the world. There were lots of deaths across the world and prolonged lockdowns which led to closure of schools in Uganda. The disease was caused by a strange pathogen that scientists isolated as having the structure below together with different posters allover the country and some still remain on streets including you school perimeters.



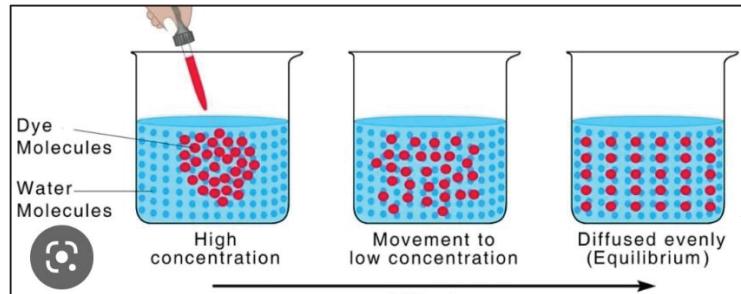
- i. Comment about the disease and the measures people in your village were at times forced to take that led to its eradication almost that today we can now sit and study. (10 scores)

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5. The senior three Biology teacher had just started the topic Transport in organisms when he placed charts on the walls of the classroom showing various ways in which transport occurs in plants. 1 2



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On completion of the Biology lesson, the CRE teacher entered to Facilitate and as she was going out, she got a chance to look at the charts on the wall and was so confused. Out of curiosity, after class she went ahead to ask one of the learners to explain to him the meaning of the pictures of the charts.

Tasks:

If you were lucky learner, briefly examine charts and help the teacher to answer her queries. (10 scores)

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SECTION B (20 marks)

6. Nalwoga Lucy is a young Senior one girl who lives in Masaka and goes to St. Catherine's College Makindye in Kampala. She usually denied her mum on visitation day because of her appearance and always claimed that she is a worker at their home and warned her before her friends at school on a certain Visitation Day, never to visit her again lest she face something she would never regret. On her death bed, mum wrote to her a note that in brief read, "my daughter, your dad raped me and caused me to leave school. He fought had to force me abort the pregnancy and I refused over and over again. He one day got a pair of pliers and plucked out my teeth one by one and warned to finish them all and after to kill me had I resisted to abort. I ran from him and finally gave birth to a nice looking daughter which is you. Lucy is now studying to be a dentist. She has a photo of her mum before and after the loss of her teeth and a model for a complete set of teeth in the normal adult, together with the dental formula showing the number of teeth in the upper and lower half of the jaw.



$$I = \frac{2}{2} C \frac{1}{1} pm \frac{2}{2} m \frac{3}{3}$$

Task

As a senior three learner who is more knowledgeable in dental care, write a letter to Nalwoga Lucy addressing each of the following concepts she would want to understand better.

- i. Simple advice on how one can care for the teeth to prevent stigma like that mum Lucy was going through including the type of food that mum Lucy was no longer comfortable of eating after loss of some of her teeth.
- ii. How to identify the different types of teeth in the human oral cavity basing on their features and the function of each teeth type.
- iii. Using the dental formula given to calculate the total number of teeth in the lower and upper jaw of the mouth and after calculate the total number of teeth in the human mouth.

END