NAME _____ INDEX NO. _____

SCHOOL _____ SIGNATURE _____

DATE _____

231/1
BIOLOGY
(THEORY)
PAPER 1
TIME: 2 HOURS

END OF TERM 1 EXAMINATION 2020

INSTRUCTIONS TO CANDIDATES

- Write your name, school and admission number in the spaces provided above.
- Sign and write date of examination in the spaces provided above.
- Answer **all** the questions in the spaces provided.
- Additional pages **must not** be inserted.
- Candidates may be penalized for false information and even wrong spellings of technical terms.
- This paper consists of **8** printed pages.
- Candidates should check to ensure that all pages are printed as indicated and no questions are missing.

FOR OFFICIAL USE ONLY

Question	Maximum score	Candidate's score
1 - 27	80	

1. Explain the meaning of the following branches of biology.

a) Cytology (1mark)

_____

b) Mycology (1mark)

_____

2. State **three** reasons why it's necessary to classify living organisms. (3marks)

_____

_____

_____

_____

3. The diagram below represents a neuron.



a) i) Identify the neuron. (1mark)

_____

ii) Give a reason. (1mark)

_____

_____

b) Identify the parts labeled A and D. (2marks)

A _____

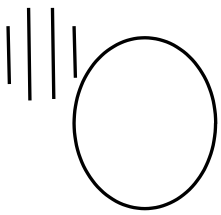
D _____

c) State the function of neuron. (1mark)

_____

_____

4. A form one student trying to determine the size of onion cells observed the following on a microscopes field of view.



If the student observed 2 cells across the field of view calculate the length of one cell in micrometers (3marks)

5. The diagram below represents a certain organism collected by a student on his way to school



a) State the class to which the organism belongs (1mark**)**

_____

b) Give **two** reasons for your answer 5(a) above (2mark)

_____

_____

_____

6. What is meant by the following terms as used in ecology?

i) Biomass (1mark)

_____

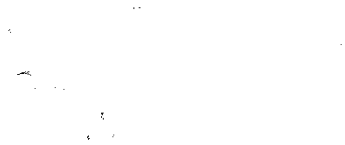
_____

ii) Ecosystem (1mark)

_____

_____

7. The diagram below represents a synapse



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a) Indicate the direction of the impulse on the diagram (1mark)

b) State **two** significances of a synapse in the body (2marks)

_____

_____

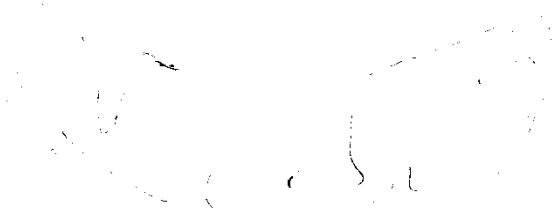
_____

8. Name a tissue whose cells are thickened with

a) Cellulose and pectin (1mark)

b) Lignin (1mark)

9. The diagram below shows the structure of an organelle



a) State the function of the organelle (1mark)

b) State **one** adaptation of the above organelle to its function (1mark)

c) Give the function of the following cell organelles

i) Lysosomes (1mark)

ii) Golgi bodies (1mark)

10. The diagram below represents across section of a certain plant



a) Name the parts labeled A and B (2marks)

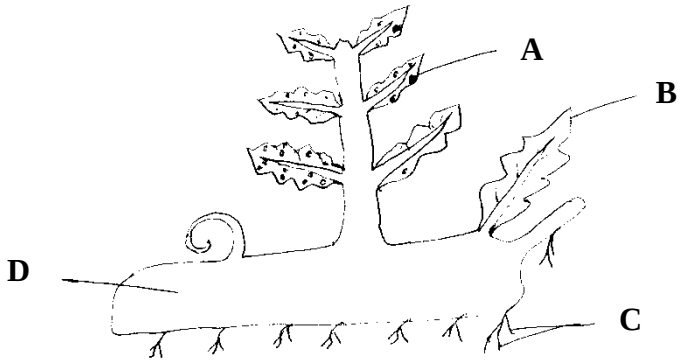
A _____

B _____

b) i) State the class to which the plant above belongs (1mark)

ii) Give a reason (1mark)

11. During research on different types of plants students found a plant that looked like the one shown below



a) Identify the plant. (1mark)

_____

_____

b) Name the parts labeled A, B, C and D. (4marks)

A _____

B _____

C _____

D _____

c) State the division to which the plant belongs. (1mark)

_____

12. Why do you think we experience more discomfort in hot humid weather than we do in hot dry weather (3marks)

_____

_____

_____

_____

_____

13. Explain why a water logged soil does not support plant growth. (3marks)

_____

_____

_____

_____

_____

14. Name the carbohydrate that is.

a) Found in abundance in mammalian blood. (1mark)

_____

b) Stored in a mammalian liver. (1mark)

_____

15. Liver damage leads to impaired digestion of fats. Explain. (2marks)

_____

_____

_____

16. The letters 'N' and n represents the dominant and recessive genes for hemophilia respectively. Write down the genotype of the following (3marks)

a) Homozygous dominant_____

b) Homozygous recessive_____

c) Heterozygote_____

17. Give **three** adaptations of human male gamete to its functions. (3marks)

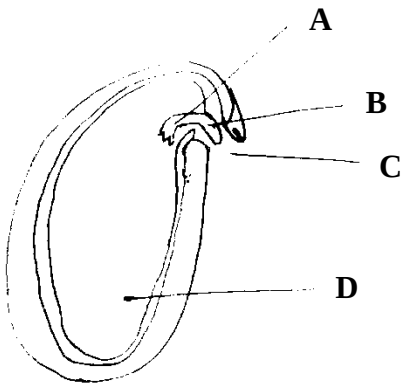
_____

_____

_____

_____

18. The diagram below represents a longitudinal section of a bean study it and answer the questions that follow:



a) Identify the parts labeled A to D. (2marks)

A _____

B _____

C _____

D _____

b) Give the role of the plant labeled D. (1mark)

_____

_____

c) What type of germination would the seed shown above undergo? (1mark)

19. a) A person who is blood group AB has an advantage over a person who is blood group O. Explain. (2marks)

_____

_____

_____

b) Give **two** reasons for screening blood before transfusion. (2marks)

_____

_____

_____

20. a) Define immunity. (1mark)

_____

_____

b) Distinguish between natural immunity and acquired immunity. (1mark)

_____

_____

_____

c) Identify **one** immunisable disease in Kenya. (1mark)

_____

21. State the causative agent of;

i) Cholera (1mark)

_____

ii) Amoebic dysentery. (1mark)

_____

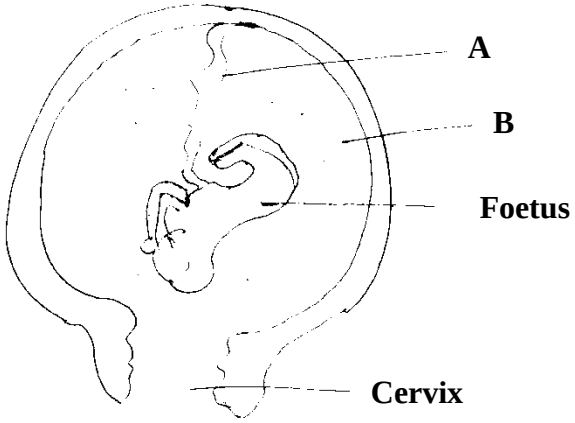
22. Explain why it difficult to calculate the respiratory quotient (RQ) in plants. (2marks)

_____

_____

_____

23. The diagram below represents a stage in the development of human foetus.



a) State **one** function of each of the structures labeled A and B. (2marks)

A _____

_____

B _____

_____

b) Apart from the size of the foetus what else from diagram illustrates that birth was going to occur in the near future.

_____

_____

24. Give the reasons why Lamar's theory on natural selection in organic evolution was discarde. (2marks)

_____

_____

_____

_____

25. Explain why the following process is essential in living organism.

a) Reproduction (1mark)

_____

_____

b) Excretion (1mark)

_____

_____

26. Explain why there are only a few days in each menstrual cycle when fertilization can occur. (2marks)

_____

_____

_____

27. Study the bio-chemical reactions given below.

$C_6H_{12}O_6 + C_6H_{12}O_6 \xrightarrow{I} C_{12}H_{22}O_n + H_2O$

$C_{12}H_{22}O_{11} + H_2O \xrightarrow{II} C_6H_{12}O_6 + C_6H_{12}O_6$

a) Identify the process marked I and II (2marks)

I _____

II _____

b) Explain how the process marked II can be carried out in a laboratory. (1mark)