KAPSABET HIGH SCHOOL

231/1
Biology
Paper 1 (THEORY)
MAY 2022
2 hours.

Name:……..Index number:……

Candidate's signature:…… Date:……

2022 TRIAL 1 MAY INTERNAL EXAMINATION

Kenya Certificate Of Secondary Education

INSTRUCTION TO CANDIDATES

a) **Write your name and admission number in the spaces provided above.**
b) **Sign and write the date of the examination in the spaces provided.**
c) **Answer ALL the questions in this question paper.**
d) **Answers must be written in the spaces provided**
e) **This paper consists of 10 printed pages**.
f) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
g) **Candidates should answer all the questions in English**.

FOR EXAMINER'S USE ONLY.

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QUESTION	1	2	3	4	5	6	7	8	9
SCORE									

10	11	12	13	14	15	16	17	18	19

20	21	22	23	24	25	26

Answer all the questions in the spaces provided.

1. State two characteristics of organisms that are easily observed in both animals and plants. (2 marks)

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2. Fingerlings of fish were introduced to two different ponds. Those fingerlings in bond one all died within four days but the fingerlings in pond two survived.

Suggest the likely reasons why the fingerlings in pond one died. (3 marks)

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3. A student observing a specimen through a microscope viewed a blurred image of the specimen. Suggest two possible reasons for this observation. (2 marks)

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4. State two processes that take place during anaphase of mitosis. (2 marks)

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5. Distinguish between convergent and divergent evolution. (1 mark)

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6. (a) Terrestrial insects such as locusts were captured and their blood was analysed. It was found that the blood does not have blood pigments such as haemoglobin. Explain. (2 marks)

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(b) State how the tracheal system in insects is adapted to gaseous exchange. (3 marks)

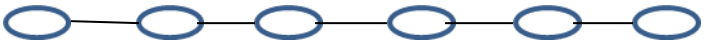
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7. State two functions of a diastema in herbivores. (2 marks)

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8. The diagram below shows part of a starch molecule.



(a) Identify what the circles and the lines joining them represents. (2 marks)

Circles ……

Lines ……

(b) Draw how the structure will appear after the enzyme amylase has acted on the starch molecule and name the products. (2 marks)

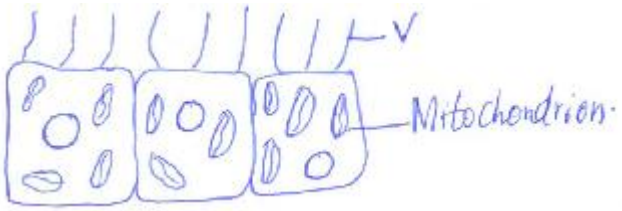
Drawing:

Products ……

9. Explain two ways in which the chloroplast is adapted to photosynthesis. (2 marks)

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10. The diagram shown below represent cells from a certain type of epithelial tissues in mammals.



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(a) Name the part labeled V. (1 marks)

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(b) Identify the region of the mammalian body where the epithelial tissue maybe found. (1 mark)

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(c) What is the role of the numerous mitochondria in the epithelial cells as shown above. (2 marks)

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11. Explain what would happen to red blood cells if blood glucose concentration increased due failure of the secretion of insulin. (3 marks)

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12. State three biotic factors that could affect an antelope living in Masai Mara. (3 marks)

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13. A drop of a person's blood shows clumping in serum of blood group B but not in serum of blood group A.

(a) Identify the blood group of this person. (1 mark)

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(b) Name the antibodies found in blood of the following groups. (2 marks)

(i) Blood group A ……

(ii) Blood group AB ……

14. list three methods used to show energy flow through the ecosystem. (3 marks)

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15. Name three organelles that would be abundantly present in secretory cells. (3 marks)

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16. Give three ways in which the red blood cell is adapted to transport oxygen? (3 marks)

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17. Describe how the leaves of submerged plants are adapted to gaseous exchange. (3 marks)

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18. Name the part of the seed whose growth brings about epigeal germination. (1 mark)

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19. State three aspects of light that affect the rate of photosynthesis. (3 marks)

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20. (a) Identify the class with organisms that have three body parts and three pairs of legs. (1 mark)

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(b) Suggest three reasons why members of the class named in (a) above are adapted to all types of habitats. (3 marks)

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21. (a) List three types of gene mutation. (3 marks)

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(b) (i) What are sex-linked genes? (1 mark)

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(ii) Name two conditions that are sex-linked. (2 marks)

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22. (a) State any two rules of binomial nomenclature. (2 marks)

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(b) Define the term species. (2 marks)

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23. (a) Name two digestive enzymes produced in their inactive form. (2 marks)

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(b) Explain why the enzymes named in (a) above are produced in inactive form. (2 marks)

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24. (a) Define immunity. (1 mark)

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(b) Giving an example in each case, give two main types of immunity. (4 marks)

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25. Identify three methods that cause fruit dispersal. (3 marks)

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26. State three factors that increase the rate of traspiration. (3 marks)

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