**Name: …………………………………………… Index no ……..…...........................**

**Class List No. ……………………....**

**Date: ……………………………………………………………**

**231/1**

**BIOLOGY**

**PAPER 1**

**Trials – October, 2024**

**TIME: 2 HOURS**

**MOI GIRLS’ HIGH SCHOOL - ELDORET**

**K.C.S.E. Trial Examination**

231/1

BIOLOGY

Paper 1

Time: 2 Hours

**Instructions to candidates.**

**FOR OFFICIAL USE**

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| --- | --- | --- | --- |
| **SECTION** | **TEACHER NO** | **MAXIMUM SCORE** | **STUDENT SCORE** |
|  | **1** |  |  |
|  | **2** |  |  |
|  | **3** |  |  |
|  | **4** |  |  |
|  | **5** |  |  |
|  | **6** |  |  |
|  | **7** |  |  |
| **1 - 29** | **TOTAL SCORE** | **80** |  |

**INSTRUCTIONS TO CANDIDATES**

* Write your name and admission number in the spaces provided above.
* Answer ALL questions in the spaces provided.
* Make sure that you have all the questions.
* Candidates will be penalized for incorrect spellings especially for biological terms.

This paper consists of 11 printed pages: NB: Candidates should check the question paper to ensure that all the printed pages are printed as indicated and no question is missing.

1. Name the branch of science that deals with:
2. Development of techniques for the application of biological processes.

(1 mark)

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1. Internal structures of living organisms (1 mark)

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2. State **two** methods of collecting small organisms (2 marks)

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3. Name **two** subdivision of species in plants and micro-organisms (2 marks)

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4. a) Identify the following tissue (1 mark)

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b) State **two** adaptations of the above tissue (2 marks)

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5. Give the functions of the following organelles (3 marks)

a) Ribosomes

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………………………………………………………………………………………

b) Centrioles

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………………………………………………………………………………………

c) Smooth endoplasmic reticulum

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6. Describe how the following factors affect the process of active transport.

a) Oxygen concentration (2 marks)

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b) Extreme change in pH (2 marks)

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7. Draw a well labelled plant cell when placed in hypertonic solution to its contents.

(3 marks)

8. Distinguish between photosynthesis and chemosynthesis (1 mark)

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9. What are the importance of the following in plant nutrition

a) Leaf mosaic (1 mark)

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………………………………………………………………………………………

b) Broad lamina (1 mark)

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10. State **two** ways in which premolars are adapted to its functions (2 marks)

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11. a) Name the causative agent of pulmonary tuberculosis (1 mark)

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12. Explain each of the following observations

a) The stump of a severed tree trunk may exude copious quantities of fluids after cutting (1 mark)

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b) Leaf fall reduces the rate of transpiration (1 mark)

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c) The xylem tissue is made up of dead tissue (1 mark)

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13. Mention **two** ways in which plants excrete their excretory wastes and give an example of product in each case. (2 marks)

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14. Explain why body temperature regulation is more difficult in a hot humid conditions. (2 marks)

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15. Suggest **two** ways in which plants compensate for lack of complex excretory organs. (2 marks)

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16. The graph below shows the concentration of antibodies produced during a primary infection and secondary infection against time. Study the graph and answer the questions below.

1. Name the type of immunity illustrated by the graph (1 mark)

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b) In a blood test a few drops of anti-B serum were added to two samples of blood separated. No agglutination occurred in either of them. What were the blood groups of the two samples. (2 marks)

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17. a) State **two** ways in which opening of the stomata is important to plants.

(2 marks)

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b) Explain how accumulation of carbon(IV) oxide in a leaf affects the stomata.

(3 marks)

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c) How do emotions increase the rate of breathing (1 mark)

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18. Give the gaseous exchange structure in roots of aquatic plants. (1 mark)

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19. a) Why is carbohydrate the most preferred respiratory substrate (2 marks)

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b) Explain why the rate of production of lactic acid increases during exercise.

(2 marks)

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20. a) State two roles of a placenta (2 marks)

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b) Distinguish between:

(i) Viviparous and oviparous mammals (1 mark)

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(ii) Fraternal and identical twins (1 mark)

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c) State **one** way in which HIV/AIDS is transmitted apart from through sexual transmission (1 mark)

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21. Mendel used a pea plant in tis experiments.

a) Give **two** reasons for the choice (2 marks)

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b) How does albinism occur? (2 marks)

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22. Explain why amoeba does not burst when placed in distilled water (2 marks)

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23. Study the diagram below.

a) Identify the structures (2 marks)

X …………………………………………………………………………………

Y …………………………………………………………………………………

b) What is the function of part labelled X (1 mark)

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24. Give a description of the following flowers. (2 marks)

a) Regular flower

………………………………………………………………………………………

………………………………………………………………………………………

b) Bisexual flower

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25. Identify the following types of ovaries

a) …………………………………………………………………. (1 mark)

1. ............................................................................................... (1 mark)
2. …………………………………………………………………………………………… (1 mark)

26. Define the following terms (2 marks)

a) Adaptive radiation

………………………………………………………………………………………

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b) Vestigial structures

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27. The picture below shows series of beaks in birds

a) State the type of evolution that may have led to the emergence of the different beaks shown on the pictures above. (1 mark)

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b) Name the type of evolutionary structure represented by the beaks shown on the pictures above (1 mark)

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c) Observe the pictures carefully. From your observations, what features are responsible for the different types of beaks (3 marks)

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28. Study the graph below and answer the questions that follow.

a) Identify the following parts of a seedling (2 marks)

M ………………………………………………………………………………

N ………………………………………………………………………………

b) Briefly describe how high concentration of auxins affect the above structures, labelled M and N (2 marks)

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29. Study the diagram below and answer the questions that follow.

a) Name parts labelled (2 marks)

X …………………………………………………………………………………

Y …………………………………………………………………………………

b) State **two** adaptations of parts labelled Z (2 marks)

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