NAME………………………………………ADM NO. ……………………….

CLASS……………..……………………….DATE…………………………….

**BIOLOGY FORM 3**

**Paper 1**

**(Theory)**

**2 hours**

**TOP SCHOOLS MULTILATERAL END OF YEAR JOINT EXAMS 2023.**

**Instructions to candidates**

1. Write your name and index number in the spaces provided above
2. Sign and write the date of examination in the spaces provided above
3. Answer **ALL** the questions in the spaces provided
4. This paper consists of 9 printed pages.
5. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

**For Examiner’s Use Only**

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| --- | --- | --- |
| Questions | Maximum Score | Candidates Score |
| 1-26 | 80 |  |

1. a)State two characteristics that are specific to plants (2mks)

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b) Name **three** mechanisms that ensure cross pollination takes place in flowering plants. (3mks)

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1. a) State **two** differences between complete and incomplete metamorphosis. (2mks)

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b) State the importance of moulting to an insect. (2mks)

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1. A student collected an organism and observed the following features: simple eyes, four pairs of legs and two body parts.
2. State the class to which the organism belongs. (1 mark)

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1. Give an example of an organism in this class. (1 mark)

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1. Name the kingdom to which plasmodium belongs (1 mark)

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1. Name the **three** end products of anaerobic respiration in plants. (3 marks)

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1. State **two** reasons why accumulation of lactic acid leads to an increase in heart beat. (2 marks)

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1. Name the flower parts that produces gametes. (2 marks)

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1. What is meant by the following terms? (2 marks)
2. Ecology

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1. Carrying capacity

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1. How is the human sperm cell structurally adapted? (2 marks)

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1. The figure below is a fine structure of a generalized animal cell as seen under an  electron microscope.

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

 A………………………………………………………………………

 B………………………………………………………………………

 (b) How is the structure labeled B adapted to its function? (2 marks)

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1. What name is given to a group of hormones that controls the development of secondary sexual characteristics in a human male? (1 mark)

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1. Name two substances that leave the foetal blood through the placenta (2 marks)

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1. Name two nutrients that are absorbed without being digested by enzymes in humans.(2 marks)

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1. State one use for each of the following apparatus in the study of living organisms. (2 marks)
2. Pooter

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1. Pitfall trap

……………………………………………………………………………………………………..

1. The figure below illustrates a food web in a certain ecosystem.

 

From the food web:

1. Draw the shortest food chain; (2 marks)
2. Identify the organisms with the highest
3. Number of predators (1 mark)

………………………………………………………………………………………………

 (ii) Biomass (1 mark)

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1. State two functions of the following parts of a light microscope.
2. Fine adjustment knob (2 marks)

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1. Stage (2 marks)

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1. The diagram below represents a certain plant.

 

1. What is the likely habitant of the plant? (1 mark)

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1. Give two reasons for your answer in (a) above. (2 marks)

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1. The number of stomata on the lower and upper surface of two leaves from plant **X** and **Y** were counted under the field of view of a light microscope. The results were as shown in the table below.

|  |  |
| --- | --- |
| **Leaf** | Number of stomata |
| Upper surface | Lower surface |
| **X** | 4 | 12 |
| **Y** | 20 | 23 |

1. Which of the leaves would be expected to have a lower rate of transpiration? (1 mark)

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1. Given a reason for your answer in (a) above (2 marks)

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1. The diagram below represents a transverse section of an ovary from a certain flower.

 

1. (i) Name the structure labeled W (1 mark)

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1. Name the type of placentation illustrated in this diagram. (1 mark)

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1. Give an example of a fruit that show the type of placentation illustrated in this diagram. (1 mark)

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1. The diagram below illustrates the structure of bread mould.
2. Name the part labeled **J** (1 mark)

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1. State the function of the structure labeled **K** (2 marks)

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1. What is meant by the following term?
2. Habitat; (1 mark)

…………………………………………………………………………………………………….

1. Ecosystem (1 mark)

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1. State two ways by which acquired Immune deficiency syndrome (A.I.D.S) Virus is transmitted. ( 2 mks)

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1. Figures 1 and 2 below represent reproductive organ of plants and an animal respectively.



* 1. Which letters in figures 1 and 2 represents the organs that produce female gametes? (2mks)

Figure 1…………………………………………….

Figure 2…………………………………………………

* 1. What is the function of the structure labeled S? (2mks)

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* 1. Name the structure labeled W (1mk)

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* 1. Which letters in figures 1 and 2 represents the structures where fertilization takes place (2mks)

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* 1. Which letter in figure 1 represents the structure where male gametes are produced (1mk)

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1. What is the function of the following structures in the human reproductive organ?
2. Fallopian tubes. (2 mark)

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1. Epididymis (1 mark)

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1. Scrotal sac (2 mark)

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1. State any **three** fruit and seed dispersal mechanisms (3mks)

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1. A student observing a leg of an insect under a hand lens made a drawing of the leg whose length was 4cm a width magnification of X2.what was the actual length of the leg? (3mks)

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1. Give two reasons why mitosis is important to organisms. (2mks)

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