NAME………………………………………ADM NO. ……………………….

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

END OF TERM 3 YEAR 2021

BIOLOGY FORM 3

Paper 1

(Theory)

2 hours

**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**

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

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

...................................................................................................................................................................................................................................................................................................................................................

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

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

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

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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

................................................................................................................................................................................................................................................................................................................................................

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)

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

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

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

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

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

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

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

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

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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

……………………………………………………………………………………………………………………………………………………………………………………………………

1. Carrying capacity

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

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

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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)

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

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

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

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

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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

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

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

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

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)

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

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

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

1. Stage (2 marks)

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

1. The diagram below represents a certain plant.

 

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

……………………………………………………………………………………………………

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

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

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)

………………………………………………………………………………………………………

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

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

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

 

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

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

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

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

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

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

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

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

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

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

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

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

1. Ecosystem (1 mark)

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

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

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

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)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

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

…………………………………………………………………………………………………………

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

............................................................................................................................................................................................................................................................................................................................

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

...........................................................................................................................................................

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

………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Epididymis (1 mark)

…………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Scrotal sac (2 mark)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

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

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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)

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

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

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

THIS IS THE LAST PRINTED PAGE