

FORM 3 TERM 3 APRIL 2022
BIOLOGY PAPER 1

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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2. 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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3. A student collected an organism and observed the following features: simple eyes, four pairs of legs and two body parts.

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

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

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

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

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

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

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

(a) Ecology

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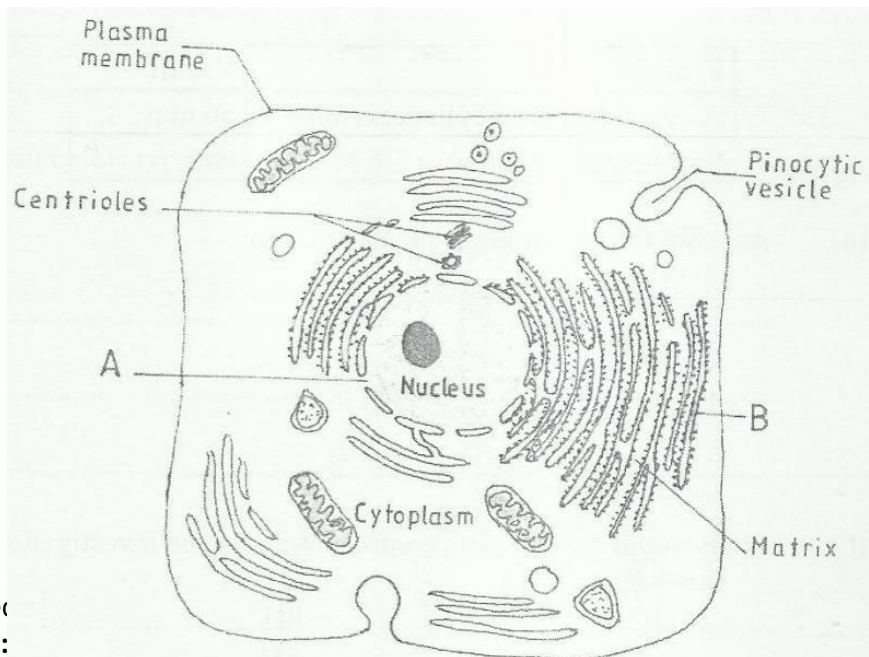
(b) Carrying capacity

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

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9. 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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10. 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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11. Name two substances that leave the foetal blood through the placenta (2 marks)

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

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

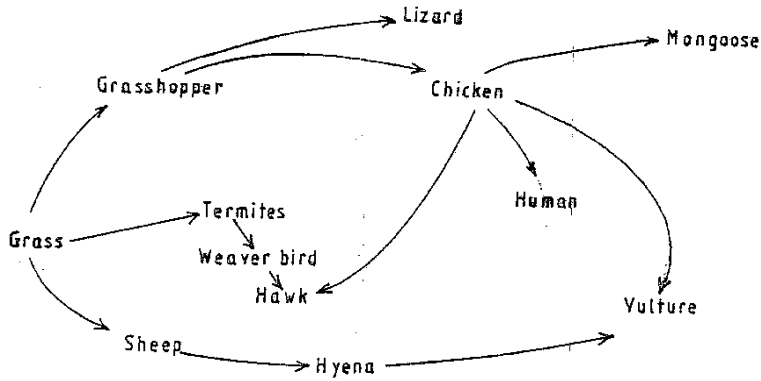
(a) Pooter

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(b) Pitfall trap

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



From the food web:

(a) Draw the shortest food chain; (2 marks)

(b) Identify the organisms with the highest
 (i) Number of predators (1 mark)

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(ii) Biomass (1 mark)

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15. State two functions of the following parts of a light microscope.

a) Fine adjustment knob (2 marks)

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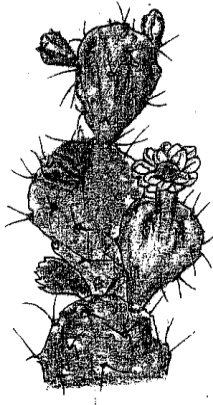
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b) Stage (2 marks)

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16. The diagram below represents a certain plant.



(a) What is the likely habitat of the plant? (1 mark)

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

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17. 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

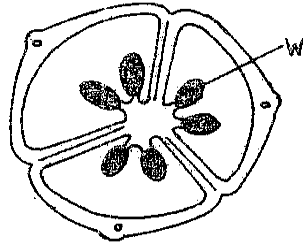
(a) Which of the leaves would be expected to have a lower rate of transpiration? (1 mark)

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

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



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

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

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

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19. The diagram below illustrates the structure of bread mould.



a) Name the part labeled J (1 mark)

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b) State the function of the structure labeled K (2 marks)

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20. What is meant by the following term?

a) Habitat; (1 mark)

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b) Ecosystem (1 mark)

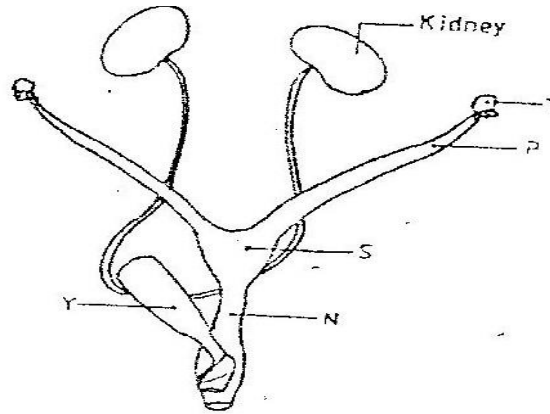
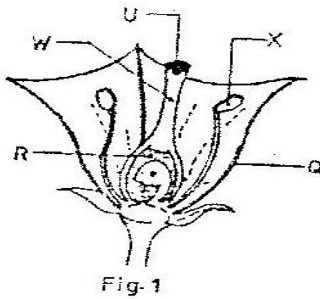
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21. State two ways by which acquired Immune deficiency syndrome (A.I.D.S) Virus is transmitted. (2 mks)

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



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

Figure 1.....

Figure 2.....

(b) What is the function of the structure labeled S? (2mks)

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(c) Name the structure labeled W (1mk)

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

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

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23. What is the function of the following structures in the human reproductive organ?

a) Fallopian tubes. (2 mark)

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b) Epididymis (1 mark)

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c) Scrotal sac (2 mark)

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

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

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