

FORM FOUR CLUSTER KCSE MODEL9

BIOLOGY PAPER 1 QUESTIONS

Answer all the questions

1. State two characteristics of bacteria cells that are not found in other living organisms.

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2. a) Name two unique structures found in plant cells but not in animal cells.

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- b) A student using an electron microscope observed the organelle below in a cell.



- i) Name the organelle above.

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- ii) State any two functions the organelle above performs.

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3. Explain how the palisade mesophyll cells are adapted for photosynthesis.

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4. a) Red blood cells were placed in distilled water for 10 minutes. It was then discovered that after this period the red blood cells were not in the water. Explain.

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- b) Name two areas in plants where active transport takes place.

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5. Lactic acid must be removed as fast as it is possible from animal tissues. Explain

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6. i) What is organic Evolution?

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- ii) Explain how vertebrae embryos are used as evidence for organic evolution.

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- iii) Name two vestigial structures in human beings.

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7. i) Name the blood vessels that link arterioles with venules.

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- ii) Explain three ways in which the vessels you named in (i) above are adapted to perform the

function.

8. a) Small seeds germinate faster than larger seeds. Explain

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- b) Banana plants produce fruits without fertilization. Give the name of this process.

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9. State the function of

- a) Myelin sheath

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- b) Acetylcholine

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10. Distinguish between ball and socket joints and Hinge joints.

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11. A couple has two children, one has blood group B while the other is blood group O. Work out the genotype of the two children if the mother is blood group A while father is blood group B.

12. Name the methods used by the following organisms to produce

- a) Amoeba

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- b) Rhizopus

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- c) Yeast

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13. Name two structures that allow gaseous exchange in terrestrial plants.

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14. a) Construct a food chain using organisms given below.

Eagles, Green grass, Snakes, Locusts, Lizards.

- b) i) Which organism in (a) above has the highest Biomass?

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- ii) Give your answer for b (i) above.

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15. The left ventricle of the mammalian heart has thicker Muscles than the right ventricle. What is the biological significance of this?

16. a) An organism has the following characteristics
- i) unicellular
 - ii) no membrane bound organelle
 - iii) nuclear material not in a membrane
- a) Name the Kingdom for the above organism.

- b) Give two reasons why a bat is classified as mammal.

17. State two functions of the cell membrane.

18. a) State the role of light in photosynthesis.

- b) Name two cells in plants that carry out photosynthesis.

19. State two properties of Xylem which make it suitable for long distance transportation of water.

20. Name the spore bearing structures in the following organisms
- i) Ferns.
 - ii) Bryophyta.
 - iii) Fungi
21. Name the branch of Biology that deals with the following:
- a) Study of fungi
 - b) Study of insects.
22. a) What is meant by the term seed dormancy?

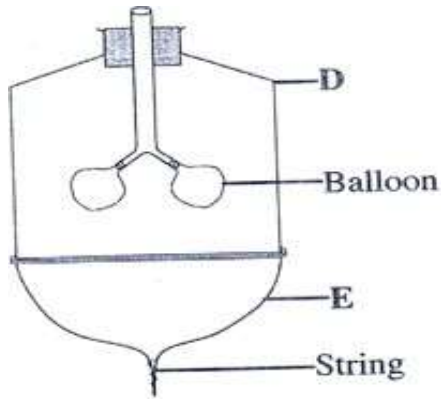
b) State three causes of seed- dormancy

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23. The diagram below represents a model used to demonstrate breathing in animals.



a) Name the mammalian structure represented by the parts labeled D and E.

i) D

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ii) E

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b) State the observation made when the string is pulled downwards

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c) Explain the observation in (b) above

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24. State three structural differences between DNA and RNA.

DNA	RNA

25. Explain why:
- a) Mammalian testes are located to hang outside the body.
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 - b) Four months after fertilization, ovaries can be removed from a human female, without terminating pregnancy.
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26. Name the type of skeleton that makes up each of the following:
- a) Locust
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 - b) Bird
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27. Why are some bacteria able to resist the effect of antibiotics?
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