

NAME:.....INDEXDATE.....

SCHOOL:.....SIGNATURE.....

231/1
BIOLOGY
PAPER 1
(Theory)
JULY/AUGUST 2010
TIME: 2HOURS

JOINT INTER-SCHOOLS EVALUATION TEST (JISSET) Kenya Certificate of Secondary Education

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BIOLOGY
PAPER 1

INSTRUCTIONS TO CANDIDATES.

- ❖ Write your name and index number in the space provided.
- ❖ Answer **ALL** the questions in this paper in the spaces provided.

For examiner's use only

Question	Maximum	Candidate's score
1-27	80	

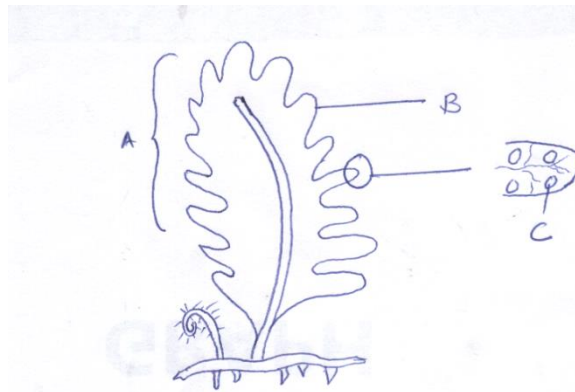
1. (a) State the importance of a testcross in genetics (1mk)

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.....

- (b) Name the four organic bases that are present in the RNA molecule. (1mk)

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 2. The diagram below represents the sporophyte generation of a fern plant. Study it and answer the questions that follow.



a) Name the parts labeled A and B (2mks)

A.....

B.....

b) Suggest the significance of the structure labeled C (2mks)

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3. Give an example of a sex linked trait in humans on

i. Y chromosome..... (1mk)

ii. X chromosome..... (1mk)

4. State two ways by which plants compensate for lack of ability to move from one place to another (2mks)

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5. Explain why a constant body temperature is maintained in mammals (3mks)

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6. Name two mechanisms that hinder self fertilization in flowering plants. (2mks)

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7. State the functions of the following structures in a mammalian tooth. (2mks)

(a) Pulp cavity

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(b) Enamel

8. (a) State three adaptations of plants which enables them reduce water loss. (3mks)

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(b) Suggest two factors that may lead to increased rate of transpiration. (2mks)

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9. State the use of the following apparatus in collecting and observing organisms

a) Pooter (1mk)

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b) Hand lens (1mk)

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c) Pitfall trap (1mk)

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10. The diameter of the field of view was estimated to be 50mm under a certain magnification. Six cells were observed along the diameter of the field of view.

What was the diameter of one cell in microns (μm) (3mks)

11. What is meant by the following ecological terms.

a) Autecology (1mk)

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b) Synecology (1mk)

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c) Habitat (1 mk)

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12. Explain the role of the following components of the skin when the temperature is high,

a) Sweat glands (2mks)

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b) The Erector pili muscle (2mks)

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c) Blood arterioles (2mks)

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13. State the importance of the following processes to living organisms

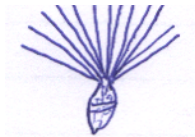
a) Locomotion (1mk)

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b) Irritability (1mk)

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14. The diagram below represents a mature fruit of a certain plant.



a) State the agent of dispersal for the fruit. (1mk)

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b) Give a reason for your answer in (a) above. (1mk)

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c) State two other characteristics of fruit and seed dispersal by the agent named in (a) above (2mks)

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15. State three adaptations of gills to their function. (3mks)

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16. Give three differences between Nervous and Hormonal communication. (3mk)

Nervous	Hormonal

17.(a) What is organic evolution (1mk)

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(b) Distinguish between divergent and convergent evolution. (2mk)

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(c) Give one way in which Homo sapiens differ from Homo habilis. (1mk)

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18.(a) State the function of olecranon process. (2mks)

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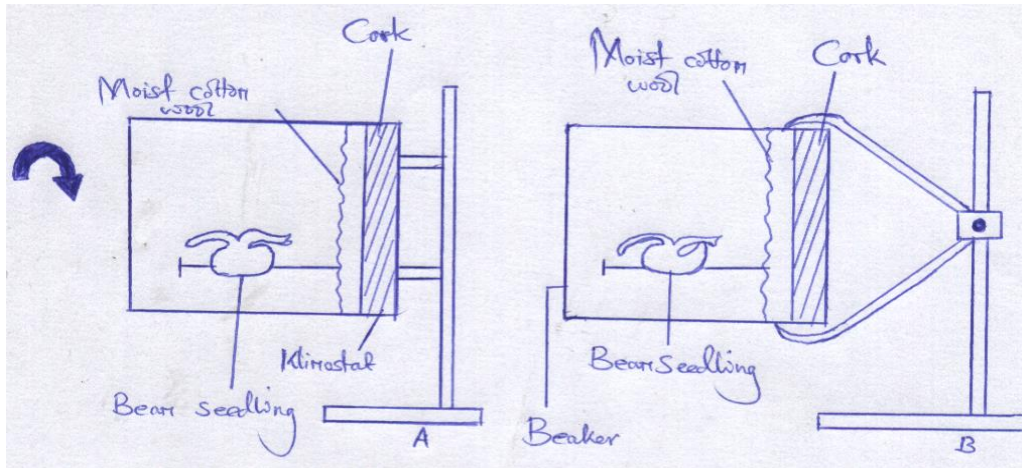
(b) Which type of joint is found at the articulation of:

(i) Pelvic girdle and femur (1mk)

.....

 (ii) Humerus and ulna (1mk)

19. In an investigation, bean seedlings were set up as shown in the diagram below.



In set up A the klinostat was set in motion and the two set ups were left for three days.

a) What was the aim of the experiment? (1mk)

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b) What observations were made in set up A and B. (2mks)

Set A

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Set B

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c) Account for the curvature of the radical in observations in set up B. (1mk)

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20. (a) State three properties of a cell membrane. (3mks)

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(b) Distinguish between Osmotic pressure and Osmotic potential. (1mk)

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21. Give three main functions of water in a living organism. (2mks)

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22. (a) (i) What is tissue fluid? (2mks)

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(ii) State the importance of tissue fluid. (1mk)

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(b) Name the blood vessel with the highest glucose level. (1mk)

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23. (a) State two functions of the cerebrum (2mks)

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(b) What would happen if cerebellum was damaged? (1mk)

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24. *Ascaris lumbricoides* is a parasitic roundworm which infects intestines of pigs and human beings. State two effects of the parasite on the host. (2mks)

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25. How are leaves of submerged plants adapted to their functions? (2mks)

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26. What is meant by

(a) Natural immunity (1mk)

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(b) Acquired immunity (1mk)

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27. Name the class in the phylum arthropoda which has the largest number of individuals (1mk)

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