NAME:……..... INDEX NO. ……

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DATE: .....

231/1
BIOLOGY
Theory
Paper 1
March/April, 2014
Time: 2 Hours

MOKASA JOINT EVALUATION EXAMINATION

Kenya Certificate of Secondary Education (K.C.S.E)
231/1
Biology
Paper 1
March/April, 2014

Instructions To Candidates

Answer all the questions on the spaces provided.

FOR EXAMINER'S USE ONLY

Question	Maximum score	Candidate's score
1-27	80	

1. Name the branch of biology that deals with the study of: (2 marks)

   a) Fungi .....

   b) Classification .....

2. Why are xylem vessels more efficient in transportation of water than tracheids? (1 mark)

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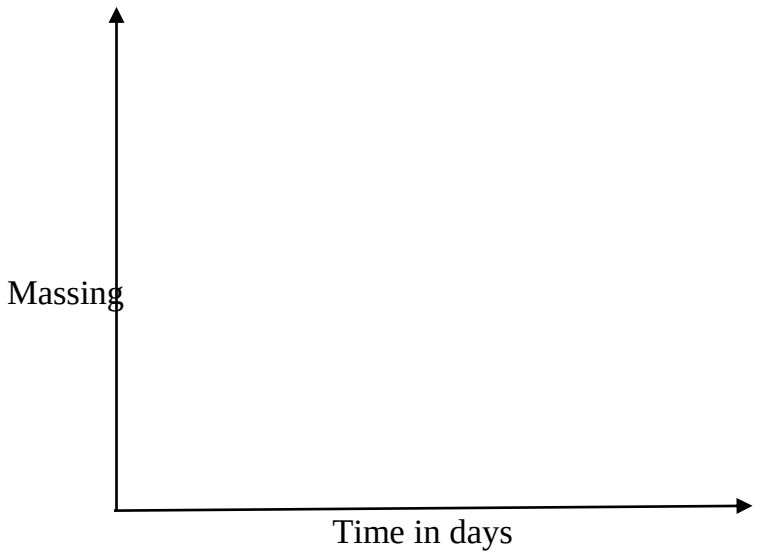
   .....

3. The graph below represents the growth of animal in a certain phylum



   a) Name the type of growth pattern shown on the graph (1 mark)

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   b) Identify the process represented by X (1 mark)

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4. a) Define binomial nomenclature (1 mark)

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   b) State **four** reasons why classification is important in biology (4 marks)

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5. a) What is holozoic nutrition (2 marks)

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b) Describe what happens in the light independent stage of photosynthesis (3 marks)

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6. Study the diagram below of a neurone in human being

a) Name the parts labelled: (2 marks)

Q …….....

R …….....

S …….....

T …….....

b) Using an arrow on the diagram, indicate the direction of movement of a nerve impulse along the neurone. (1 mark)

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…….....

c) State how Q and P are involved in the transmission of impulses (2 marks)

Q …….....

…….....

R …….....

…….....

7. Name **two** main sites in plants through which gaseous exchange take place (2 marks)

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8. a) Explain why a person discharges urine more frequently when environmental temperatures are low than when they are high (2 marks)

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b) Name the nitrogenous waste product excreted by a fresh water fish (1 mark)

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9. During a biology lesson the teacher provided students with the following apparatus

- A pooter
- A scalpel
- Specimen bottle
- Forceps
- Sweep net
- Chloroform

a) Give **two** precautions the biology teacher gave to students before the practical on collection of specimens began. (2 marks)

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b) What was the function of; (2 marks)

(i) Forceps

(ii) Pooter

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10. In body cells of all organisms chromosomes occur in pairs. Members of each pair have a characteristic length and shape.

a) What is the scientific name of such a chromosome pair? (1 mark)

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b) What name is given to a cell that contains one member of each pair of chromosomes? (1 mark)

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c) Name the part in human females where meiosis takes place (1 mark)

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11. a) Give **two** possible ways of establishing the genotype of an organism whose genotype is unknown (2 marks)

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b) Give the genotype of a male who could be born hemophiliac (1 mark)

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c) What is the importance of crossing over (1 mark)

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12. a) What is organic evolution (1 mark)

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b) Using examples explain what is meant by;

(i) Adaptive radiation (2 marks)

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(ii) Convergent evolution (2 marks)

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13. In what ways are gill filaments of fish adapted to their function (3 marks)

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14. State the role of the following hormones in menstrual cycle: (3 marks)

a) Follicle stimulating hormone

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b) Progesterone

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c) Oestrogen

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15. Explain what happens to excess glucose in the body (3 marks)

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16. Carefully study the apparatus below which was made to rotate making one revolution in 15 minutes. A seedling with a straight shoot was attached to the apparatus as shown in the figure.

a) What is the name of the apparatus shown? (1 mark)

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b) Considering all other factors constant, explain the expected results after five days. (3 marks)

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17. Name the strengthening substances in following. (2 marks)

(i) Exoskeleton

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(ii) Human bone

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18. Name the type of muscle in human being found in the; (2 marks)

a) Artrium

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b) Oviduct

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19. Briefly describe the role of the hypothalamus in osmoregulation (2 marks)

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20. a) Give **two** reasons why higher animals need an internal transport system (2 marks)

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b) In what form is oxygen transported from lungs to the tissues? (1 mark)

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21. The figure below represents a mammalian bone

a) Identify the bone labelled X (1 mark)

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b) Which bone articulates with bone X at point Y? (1 mark)

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c) Name the type of joint formed with the above bone at point Y (1 mark)

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22. What is the importance of seed dormancy (2 marks)

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23. Explain the importance of the following in fish;

a) Myotomes on either side of the body (1 mark)

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b) Scales overlapping backwards (1 mark)

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c) Paired fins (1 mark)

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24. Name the type of response shown by leaves of (*Mimosa Podica*) when they fold after being touched. (1 mark)

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25. a) State **two** features of a ball and socket joint (2 marks)

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b) Name the bone that allows the head to;

(i) Node (1 mark)

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(iii) Turn sideways (1 mark)

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26. Explain how the following affect the rate of diffusion (2 marks)

(i) Temperature

…….....

(ii) Thickness of the membrane

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27. State the importance of tactic responses (2 marks)

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ANSWERS:

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