

NAME..... CLASS ..... C/ NO .....  
SIGNATURE.....



**233/1 BIOLOGY**

**FORM TWO**

**CAT 3 TERM 1 ,2014**

**TIME: 2HOURS**

**INSTRUCTIONS TO THE CANDIDATES:-**

- Write your **name, class** and **class number** in the spaces provided.
- Answer **all** the questions in the spaces provided.
- All working **must** be clearly shown where necessary.

**FOR EXAMINERS USE ONLY**

QUESTIONS	MAXIMUM SCORE	SCORE
1-16	80 MKS	

**THIS PAPER CONTAINS 7 PAGES.**

1. State the functions of the following (2mks)
- i) Forceps  
 .....  
 .....
- ii) Sweep net  
 .....  
 .....
2. Explain the following characteristics of living things. (2mks)
- i) Excretion  
 .....  
 .....
- ii) Growth and development  
 .....  
 .....
3. a) State **two** reasons for classification . (2mks)  
 .....  
 .....
- b) Highlight two principles used in binomial nomenclature (2mks)  
 .....  
 .....
- c) Name the taxon that has members with common characteristics. (1mk)  
 .....
4. Explain why the following processes are important when using a microscope and preparing slides.
- a) Use fine adjustment knob when using high power objective  
 .....  
 .....
- b) Stain specimen (2mks)  
 .....  
 .....
5. Name the organelles that:- (2mks)
- a) Controls passage of substances in and out of the cell.  
 .....
- b) Is the site of protein synthesis? (1mk)  
 .....

6. A) Give the formula of working out the magnification of a microscope. (1mk)

c) Calculate the magnification that is obtained when an object is viewed with x10 eye piece and x100 objective lens. (2mks)

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.....  
.....

d) State **two** properties of the cell membrane (2mks)

.....  
.....

7. Plant cells do not burst when immersed in distilled water while animal cell will burst. Explain.

.....  
.....  
..... (4mks)

8. Explain how the following factors affect the rate of diffusion. (4mks)

a) Diffusion gradient.

.....  
.....

b) Surface area to volume ratio.

.....  
.....

9. Distinguish the following terms. (6mks)

a) Taxonomy and Taxon.

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

b) Autotrophic nutrition and heterotrophic nutrition.

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.....  
.....

c) Heterodont and homodont.

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

10. Briefly describe what happens during the light state of photosynthesis. (4mks)

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

11. State **two** adaptations of the leaf to its photosynthetic function. (4mks)

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.....  
.....

12. Explain how the following affect the rate of photosynthesis. (2mks)

i) Light intensity.

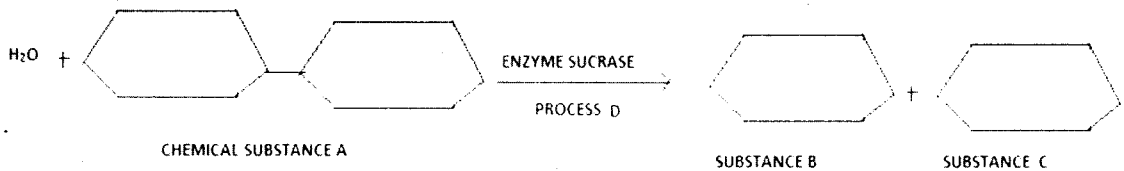
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ii) Carbon (IV) oxide concentration.

(2mks)

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

13. The symbol equation below shows what takes place in a certain region of the alimentary canal of man.



i) Name substance

(3mks)

A.....  
B.....  
C.....

ii) Name process D

(1mk)

.....

iii) Name part of alimentary canal where the process represented by the equation above takes place. (1mk)

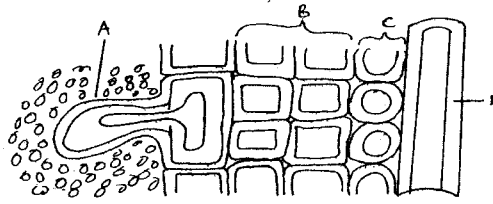
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iv) What is the opposite process of D

(1mk)

.....

14. The diagram **below** shows part of a longitudinal section of a young root.



(a) Name the parts labeled (4 marks)

- A.....
- B.....
- C.....
- D.....

(b) State the function of the part labeled A. (1 mark)

.....

(c) State **two** adaptations of the labeled D to its functions. (2 marks)

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

15. Name the forms in which the following gases are transported in human beings.

a) Oxygen (1mk)

.....

b) Carbon (IV) oxide (2mks)

.....  
 .....

16. State what happens during diastole to the :

i) Ventricular muscles (1mk)

.....

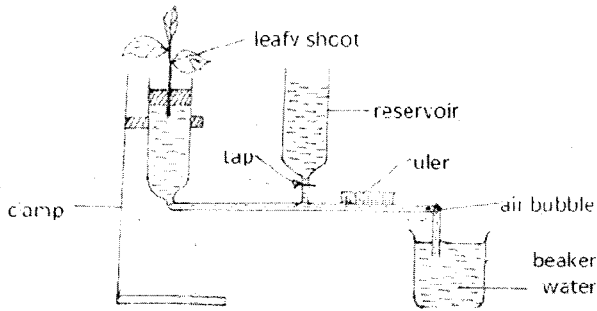
ii) Volume in the ventricles (1mk)

.....

iii) Cuspid valves (1mk)

.....

14. A set up that was used to investigate certain process in plants as shown in the diagram.



(a) What is this apparatus used for? (1mk)

.....

(b) Name the apparatus (1mk)

.....

(c) Giving reasons state **two** precautions that should be taken when setting up the experiment. (2mks)

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

(d) What is the role of the reservoir with tap? (2mks)

.....  
 .....

(e) State **two** environmental factors that affect the process under investigation. (2mks)

.....  
 .....

15. Distinguish between a single circulatory system and double circulatory system. (2mks)

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

16.i) Name the blood vessel that provides the liver with oxygenated blood. (1mk)

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ii) Transport blood from heart to the lungs.

(1mk)

.....  
iii) Name the blood vessel with highest concentration of

(2mks)

Glucose

.....  
Oxygen