

END OF TERM 1 EXAMS

BIOLOGY

FORM FOUR

PAPER 1

TIME: 2 HOURS

NAME..... ADM NO:.....

SIGN..... INDEX NO:.....

DATE;.....

INSTRUCTIONS TO CANDIDATES:

- Answer **ALL** the questions
- Answers should be written in the spaces provided

1. State the functions of each of the following organelles: (2mks)

a) Plasma membrane.....

.....

b) Ribosome.....

.....

2. (a) State **two** ways by which leaves of plants are adapted to gaseous exchange. (2mks)

.....

.....

.....

b) State a function of aerenchyma tissue. (1mk)

FOR MARKING SCHEMES CALL/WHATSAPP 0705525657

.....
.....

3. How do identical and fraternal twins arise? (2mks)
i) Identical

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

ii) Fraternal (1mk)

.....
.....

4. State **three** functions of an exoskeleton. (3mks)

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

5. What is meant by destarching a leaf? (1mk)

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

6. State **two** ways in which sunlight increases the rate of transpiration. (2mks)

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

7. List **two** features of flowers that attract insect pollinators. (2mks)

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

8. (a) State **two** adaptations of pelvic girdle to its functions. (2mks)

.....

.....

.....

b) Name the type of joint found between the femur and pelvic girdle. (1mk)

.....

.....

9. The table below shows some nutrients, their sources and disease caused by their deficiencies in man. Complete the table. (2mks)

Nutrient	Source	Deficiency disease
Iron		
		Night blindness

10.(a) Give **two** ways in which red blood cells are adapted to carry out their functions. (2mks)

.....

.....

.....

(b) Name chemical forms in which carbon IV oxide is transported in the human body. (2mks)

.....

.....

.....

11.Name any **two** divisions of the kingdom plantae. (2mks)

.....

.....

.....

12.a) Name the hormone produced in human body when one takes in a large amount of water. (1mk)

.....

.....

(b) What disease results from the inadequate production of the hormone in 12(a) above? (1mk)

.....

.....

13. A cow in a paddock was found to be infected with ticks. State the trophic level occupied by the (2mks)

a) i) Cow.....

ii) Tick.....

b) Give **one** disadvantage of using pesticide to eliminate the ticks. (1mk)

.....
.....

14. What is the role of water in germinating seeds? (2mks)

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

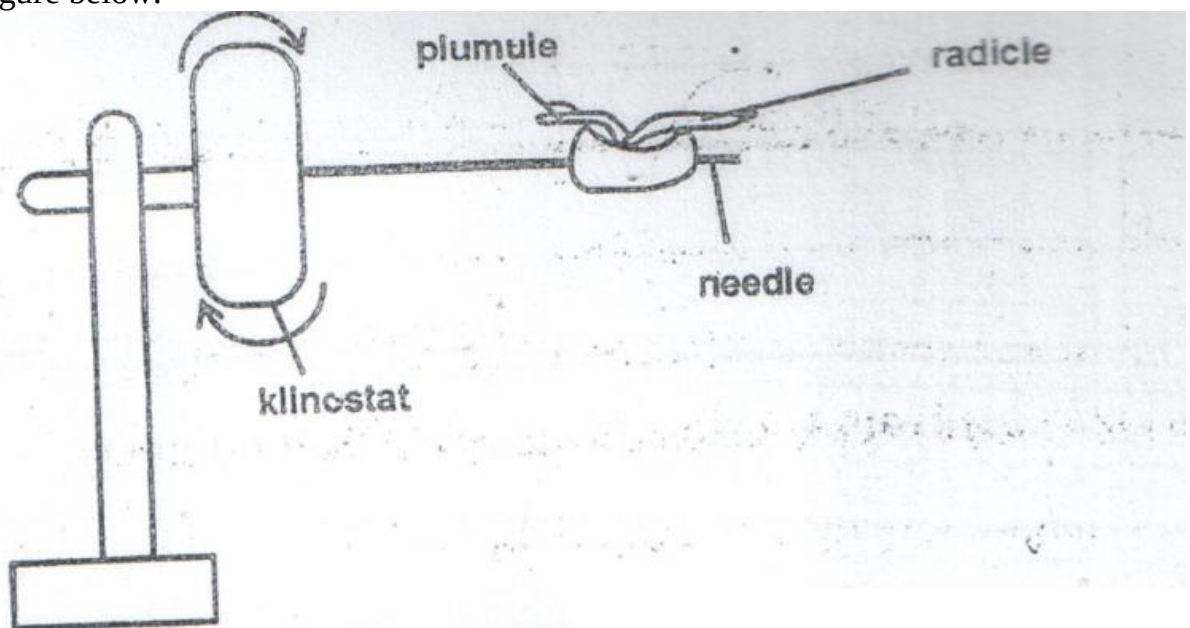
15. (a) State **two** limitations of fossil records as an evidence for organic evolution theory. (2mks)

.....
.....

(b) State an ideal that led to the formulation of larmacks theory of evolution. (1mk)

.....
.....

16. Study the figure below.



A seedling with straight radical and plumule was attached to rotating Klinostat as shown above.

a) Draw the appearance of the seedling after three days. (1mk)

b) Explain your observations (a) above. (2mks)

.....

.....

.....

17.(a) Write the base sequence of MRNA that would be coded from the DNA strand shown below. (2mks)

----- ----- ----- ----- ----- ----- -----							DNA strand
C	A	T	G	A	G	T	

----- ----- ----- ----- ----- ----- -----							RNA strand
---	--	--	--	--	--	--	------------

(b) How many nitrogenous bases code for a single amino acid? (1mk)

.....

.....

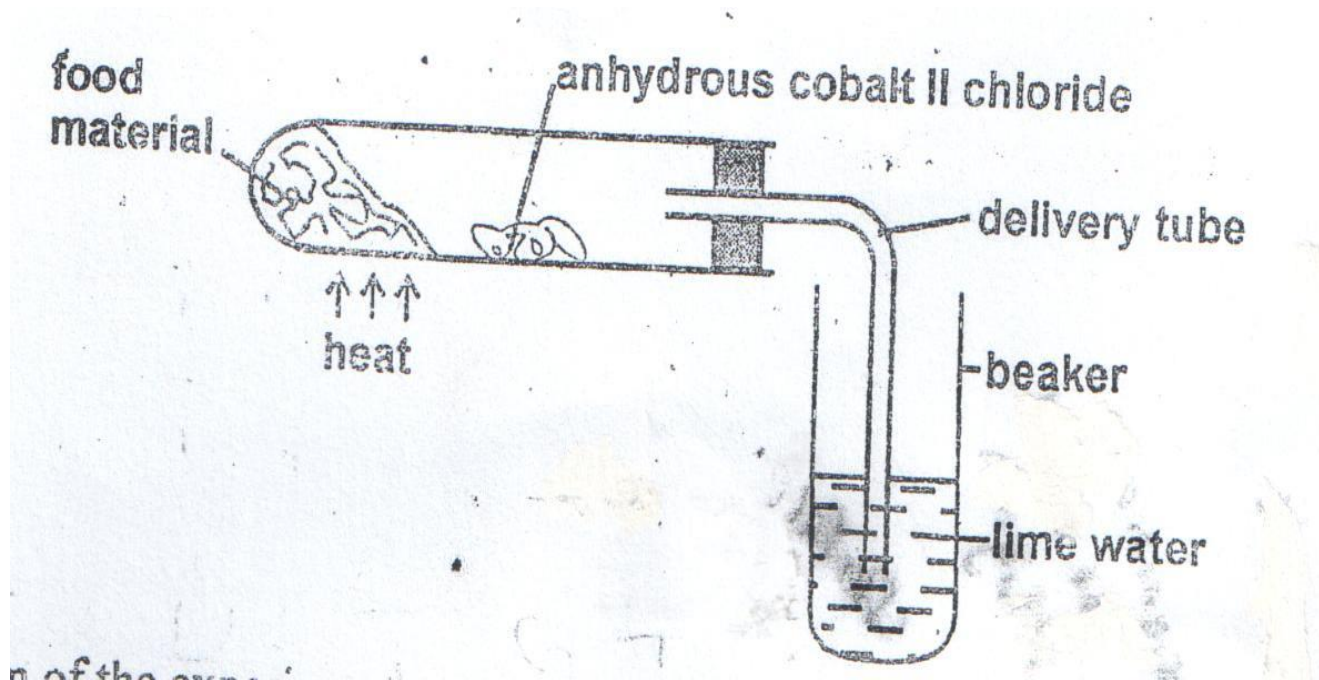
18. Why are animal cells put in isotonic solution when performing an experiment? (2mks)

.....

.....

.....

19. Study the diagram below



a) Suggest the aim of the experiment.

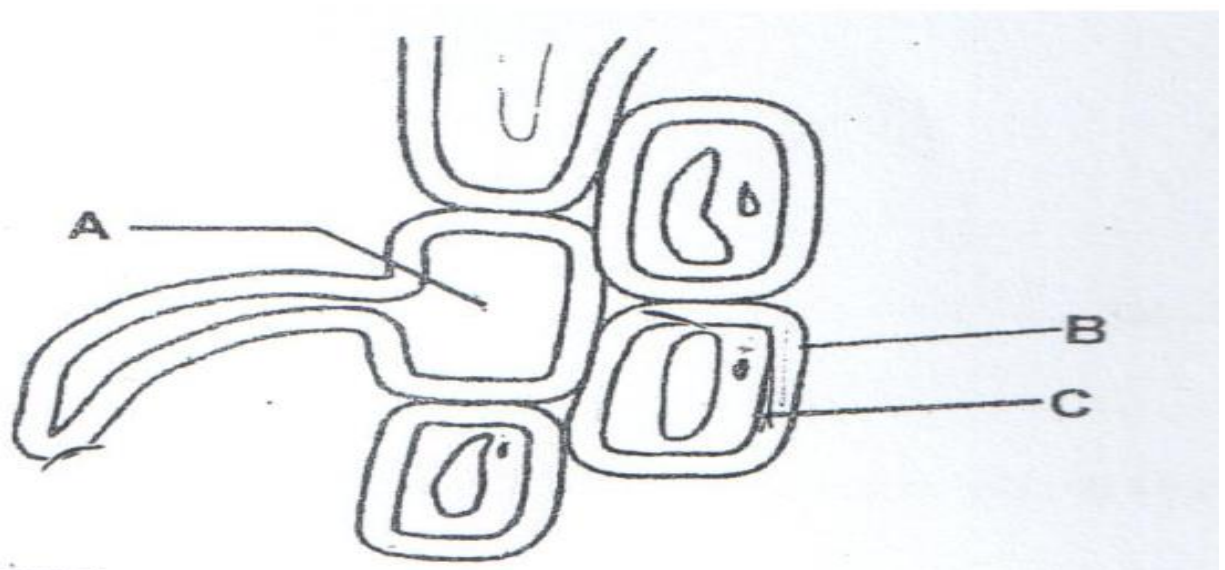
(1mk)

.....
.....

b) Account for the results observed at the end of the experiment.

(2mks)

20.



(a) Name the parts labeled A, B and C.

(3mks)

A –
B -
C -

(b) Name the process by which water passes from the soil to the part labeled A. (1mk)

.....
.....

21. State role of the following bacteria in the nitrogen cycle. (3mks)

a) Nitrosomonas.....

b) Nitrobacter.....

c) Azotobacter.....

22. Explain the importance of each of the following during digestion in man.

a) Teeth..... (1mk)

b) Saliva(1mk)

23. (a) Distinguish between prokaryotic and eukaryotic cells. (2mks)

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

b) Name one kingdom with:

i) Prokaryotic cells(1mk)

ii) Eukaryotic cells.....(1mk)

24. What would blood gain on passing through each of the following organs:

i) The lungs.....(1mk)

ii) Active muscles.....(1mk)

25. State **two** main characteristics of organisms in kingdom fungi. (2mks)

.....

.....

.....

26. State **two** adaptations of fruits dispersed by wind. (2mks)

.....

.....

.....

27.(a) Describe how white blood cells fight against infection. (2mks)

.....

.....

.....

.....

(b) A drop of a person's blood shows clumping with the anti-B serum but not with anti-A serum. State the person blood group. (1mk)

.....

.....

28. Calculate the diameter of the cells in micro-metre given that the diameter of the field of view is 3mm and that they are 10 cells across the field of view, the total magnification was 100x. ((2mks)

29.(a) Apart from AIDs, name **one** diseases of the reproductive system in man that is caused by viruses. (1mk)

.....

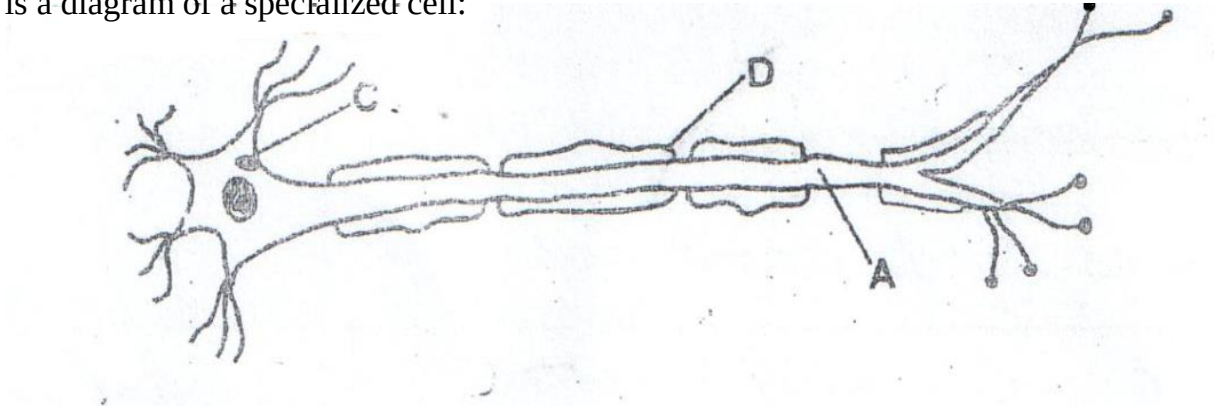
.....

(b) State **one** way by which HIV/AIDs is transmitted from mother to child. (1mk)

.....

.....

30. Below is a diagram of a specialized cell:



i) Name parts (2mks)

A

C

ii) What is the role of part D? (1mk)

.....
.....

31. State two roles of progesterone. (2mks)

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

32. What is parthenocarpy? (1mk)

.....
.....

End