2020 KARONGA DIOCESE MOCK

MALAWI SCHOOL CERTIFICATE OF EDUCATION

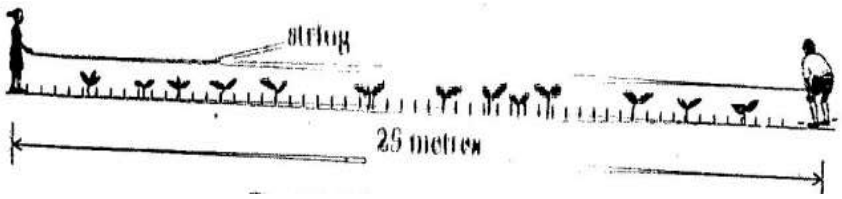
BIOLOGY

Subject Number: M

DATE: …….. **Time Allowed: 2 hours**

PAPER I (100 Marks)

1.(a)Figure 1 is a diagram showing one of the methods of sampling organisms



_____

i)Name the method used.

_____(1mark)

ii)What are the two features that are determined by the methods above.

_____

_____(2marks)

(b)Explain how the following assist in respiratory system.

(i)Moist surface

_____(2marks)

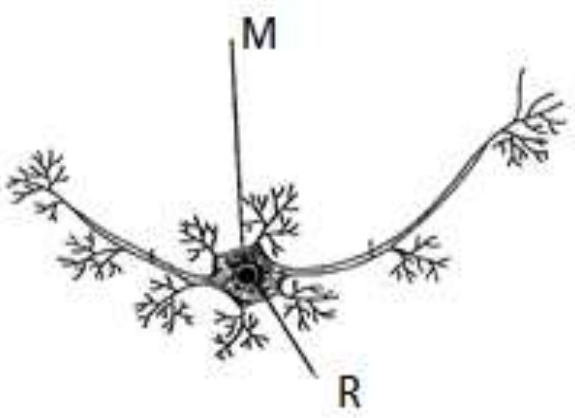
(ii)Thin surface

_____(2marks)

(ii) Network of blood capillaries

_____(2marks)

2a.Figure 2 is a diagram showing a neurone. Use it to answer the questions that follow



(i)Name the part labeled R_____
(1mark)

(ii)Give any one function of Part labeled M_____ (1mark)

b) Explain any three causes of goiter

_____(2marks)

_____(2marks)

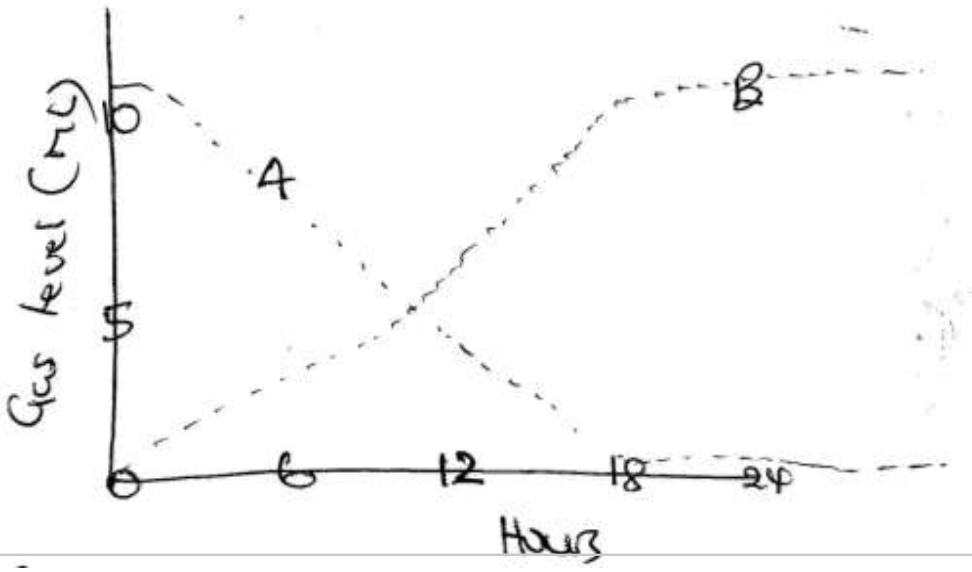
_____(2marks)

3a. Explain why a male organism with a recessive sex-linked trait usually produce no female offspring with the trait?

_____

_____(2marks)

b)Yeast cells and sucrose were placed into a test tube , then the tube was plugged, the yeast – sucrose mixture incubated for 24 hours.Gas bubbles began to rise to the top of the tube .After 24 hours no sucrose was left in the solution shown graphically below.



i.What process was Yeast using to digest the sucrose

(ii) Identify gas A _____(1 mark)

(iii) Why do muscles become tired after running or lifting heavy objects

_____(1 mark)

(iv)How do you overcome the problem in 3(iii)

_____(1 mark)

4(a)State any two aims of treating cholera in a patient

_____

_____(2 marks)

(b)Study the equation below

$C_6H_{12}O_6$ _ $2C_2H_5OH$ + $2CO_2$ + __X____

(I)In what organism does this chemical process take place

_____(1 mark)

(ii) Complete part labeled X

_____(1 Mark)

5a. Both carriers of Albinism of different sex married to each other. Come up with the crossing and answer the question below

(ii) What is the ratio of normal child in the crossing

_____(1 marks)

5 b.(I)Define serum

_____

_____(1mark)

(ii)State one of the uses of fibrinogen

_____(1mark)

c. State two effects of global warming on the environment

_____

_____(2 marks)

6a(i)Name two group of vertebrates animals that have loop of Hence

_____

_____(2 marks)

(ii)Why do kidneys undergo a process of selective reabsorption

_____(1 marks)

(iii)What is the effect of aldosterone in osmoregulation

_____(1 mark)

B. Why is it unhealthy to sit in a traffic jam with the windows open

_____(1 mark)

(ii)Which part of mitochondria help to increase the surface area for respiration

_____(1 mark)

7 a. Define each of the following terms

(ii) Uremia

_____

_____(1 marks)

(ii)Blood typing

_____

_____(1 mark)

b. What is the difference between reduction reaction and condensation reaction in photosynthesis

_____

_____(2 marks)

C.A student set up an experiment show below using a freshly obtained leafy shoot. The shoot was cut and mounted on the capillary tube under water.

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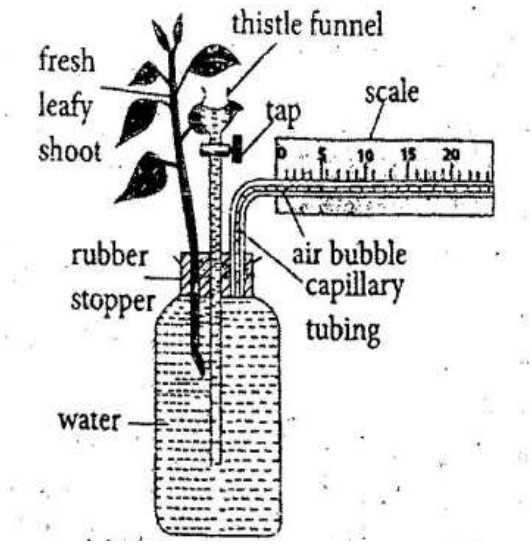


(a)Suggest a possible aim of this experiment

_____(1 mark)

(b)Explain why the leafy plant was cut and mounted under water

_____

_____(1 mark)

(iii)Give the name for the apparatus used in the above experiment

_____(1 mark)

(iv)State two of the environment factors that would influence the movement of the air bubble along the scale.

_____

_____

_____(2 marks)

8a.State the effects of the following in Nitrogen cycle

(i)Lightning _____

_____(1 mark)

(ii)Symbiotic bacteria

_____

_____(1 marks)

b. Why is sodium pump Mechanism significant in transmission of impulse

_____

_____(1 mark)

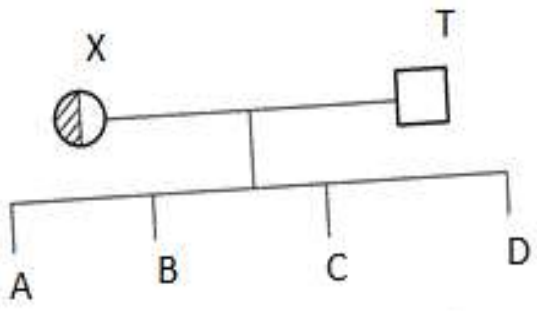
c. Explain two changes that occur in the plant cell during plasmolysis

_____

_____

_____(2 marks)

9a. Complete the following pedigree showing inheritance of haemophilic in the royal family



What do X and T represent?

X_____

T_____(2 mark)

b. Complete the outcomes at

A._____

B._____

C_____

_

D_____(4 marks)

C. Why are pedigree used

_____(1 mark)

10a. Mwachilinda and Mangazi as students of Temwamukonda Private Secondary School mixed four table spoons of sugar in 1 litre of water and the same four table spoons of sugar in 20ml of water respectively .

In whose mixture

(i)Had the osmotic potential high

_____(1 mark)

(II) Had the osmotic potential low

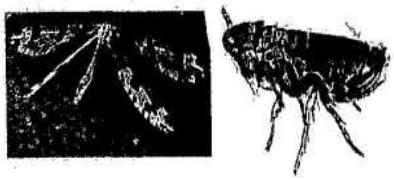
_____(1 mark)

(iii)Explain the reasons in 10 (i) and (ii)

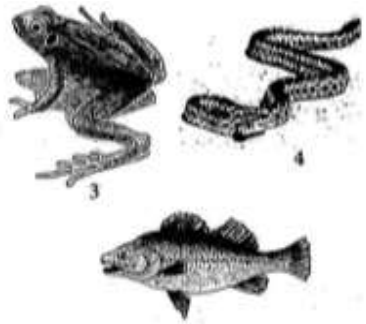
_____

_____(2 marks)

5b. The figures below represent some animals. Use the dichotomous key to identify organisms



1 2



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(I)Name two observable feature that were used in the dichotomous key (2marks)

_____

_____

(II)Construct the dichotomous key (5 marks)

(II) Give the steps that were used to identify the organisms (2marks)

SECTION B

Answer all the three questions in the section .your answer should be in an essay form.

(11)Explain any five effects of auxins an plant growth

_____

_____

_____

_____

_____

_____

_____

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_____

_____

(10 marks)

12.Explain five steps in carrying out a " kiss of life" to rescue the victim.

(10 marks)

13.Explan any five function of lymphatic system .

_____(10 marks)

END OF QUESTION PAPER