STUDENT NAME_____ **CLASS** _____

LIKANGALA SECONDARY SCHOOL

2020 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATIONS

BIOLOGY

Subject Number: M

Time: 2 hours

8:00 – 10:00 am

PAPER I

(100) Marks)

INSTRUCTIONS

1. This paper contains 11 printed pages. Please check.
2. This paper has 2 sections, sections A and B. answer all questions in both sections.
3. Write your name and class on top of all pages.
4. At the end of the examinations, hand in your paper to the invigilator.

Question number	Tick if answered	Do no write in these columns	
1			
2			
3			
4			
5			
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9			
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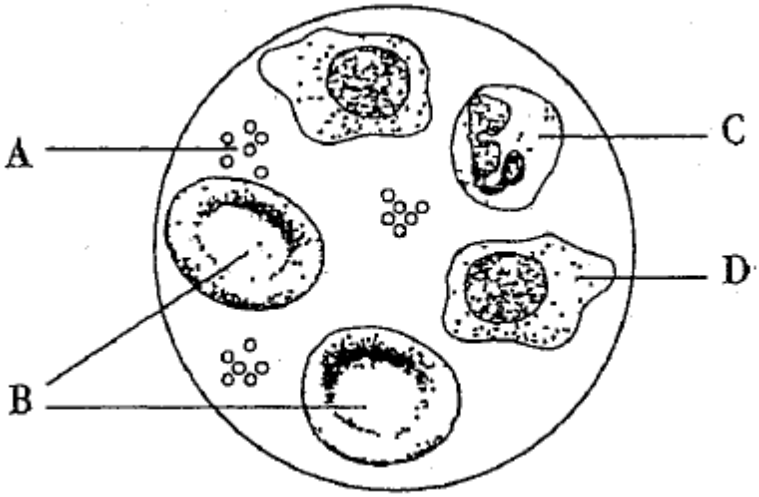
18			

@Likangala2019

1. Figure 1 is a diagram representing blood as seen under a microscope .use it to answer the questions that follow.



(a) Use letters to give parts responsible for the following

i. Transport of oxygen _____ **(1 Mark)**

ii. Making antibodies _____ **(1 Mark)**

iii. Blood clotting _____ **(1 Mark)**

(b) How do C and D differ in the way they function?

_____

_____ **(1 Mark)**

(c) Explain two ways in which the structures that transport oxygen adapted for their function

_____

_____ **(1 Mark)**

(d) State two roles of the lymphatic system

_____

_____ **(1 Mark)**

2. (a) Under what condition is adrenaline secreted in human body?

_____

_____ **(1 Mark)**

(i) Which gland in the body secretes the hormone in a (i)?

_____

_____ **(1 Mark)**

(ii) What effect does the hormone have on the circulatory and breathing system?

_____

_____ **(1 Mark)**

(b) What mineral element is needed for the formation of thyroxine?

_____

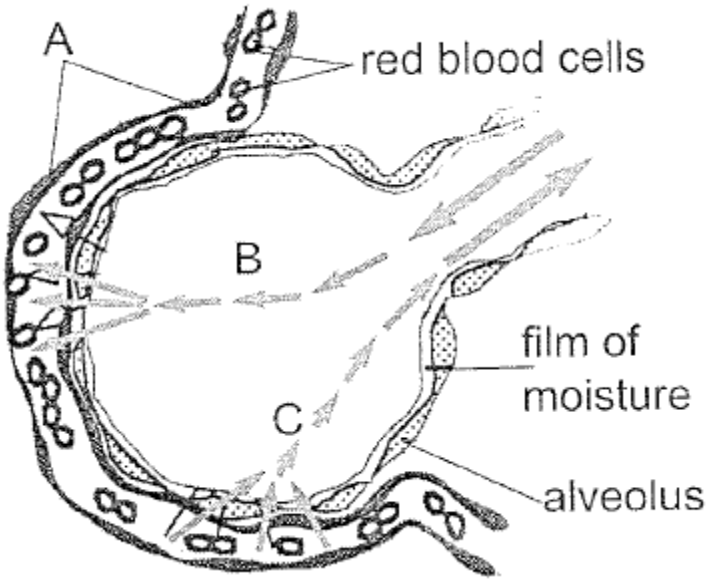
_____ **(1 Mark)**

(c) Why is the pituitary gland called the master gland?

_____

_____ **(1 Mark)**

3. Figure 2. is a diagram of an alveolus surrounded by a blood capillary. use it to answer the questions that follow



(a) Name the parts labelled A, B and C

A

B

C

(b) Suggest a possible function of a thin film of moisture on the lining of the alveolus

_____

_____ **(1 Mark)**

4. (a) Explain how one acquire

(i) Natural active immunity

_____

_____ **(1 Mark)**

(ii) Natural passive immunity

_____

_____ **(1 Mark)**

(b) Children under five years are vaccinated against diseases such as Tetanus and Tuberculosis. Explain how vaccination protect children against infection

_____

_____ **(1 Mark)**

(c) What is the function of Helper T-cells in the body?

_____

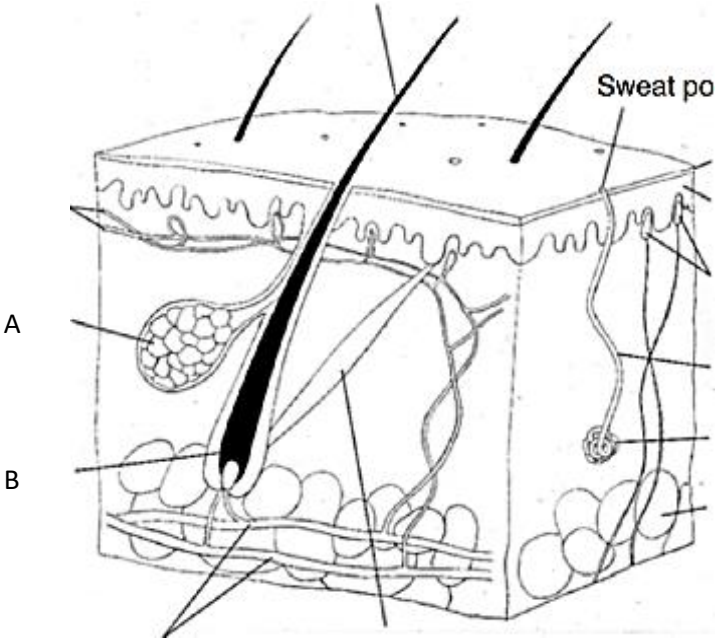
_____ **(1 Mark)**

(d) State the effect of HIV on Helper T-cells in the body

_____

_____ **(1 Mark)**

5. Figure 3. shows a diagram of a vertical section of the human skin. Use it to answer the questions that follows



(a) Name the parts labelled A, B and C

A

B

C

(b) State one function of the skin.

_____

_____ **(1 Mark)**

6. (a) List two examples of human activities that affect the environment

_____

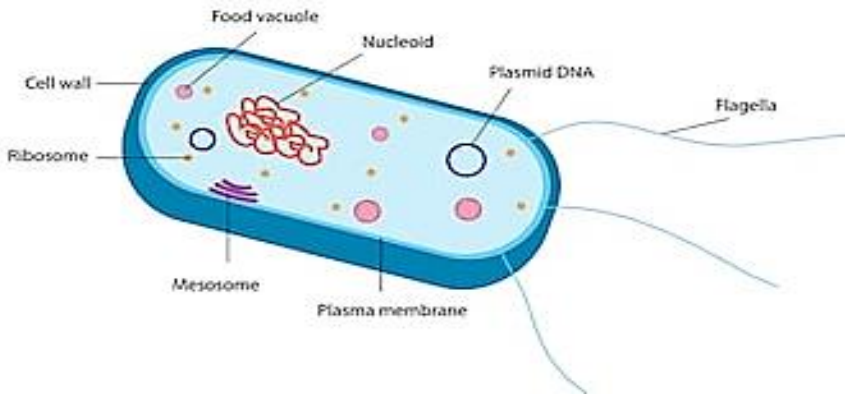
_____ **(1 Mark)**

(b) State two ways of mitigating the impact of climate change

_____

_____ **(1 Mark)**

7. Figure 4. is a diagram of a microorganism. Use it to cover the questions that follow



(a) State two useful and harmful ways of the microorganism

(i) Useful ways

_____

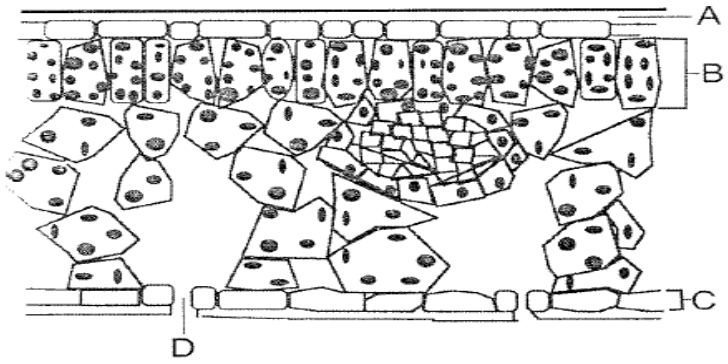
_____ **(1 Mark)**

(ii) Harmful ways

_____

_____ **(1 Mark)**

8. Figure 7. shows a diagram representing a cross section of a leaf. Use it to answwer the questions that follow



(a) Name the parts labelled R and S

_____

_____ **(1 Mark)**

(b) (i) Which tissue is the main site for photosynthesis in the leaf?

_____

_____ **(1 Mark)**

(ii)Give a reason for your answer to 7b (i)

_____

_____ **(1 Mark)**

(c) List wo raw materials which the leaf needs when undergoing photosynthesis

_____

_____**(2Marks)**

9. Figure 8. shows a response in plants. Use it to answer the question that follows.

(a) Identify the response _____ **(1Mark)**

(b) What is the stimulus _____ **(1Mark)**

(c) Explain what brings the response

_____

_____ **(1 Mark)**

10. (a) Mention two regions along the alimentary canal where physical digestion occurs

_____

_____ **(1 Mark)**

(b) Name any one process in absorption of the end product of digestion

_____

_____ **(1 Mark)**

(c) Describe what happens to food after digestion

_____

_____ **(1 Mark)**

11. Figure 9. shows the diagram of part of a nephron . use it to answer the question that follows

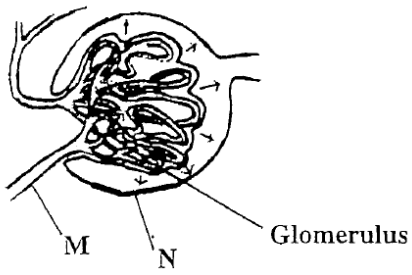


Figure 8

(a) Name the partslabelled W and Z

_____

_____ **(1 Mark)**

(b) Name the process that occur in the region X

_____

_____ **(1 Mark)**

(c) State two substances that become part of the fluid shown by arrow X

_____

_____ **(1 Mark)**

(d) (I) What is the effect of an intake of salt solution on urine production?

_____ **(1 Mark)**

(ii)Which hormone is responsible for control of salt concentration in blood ?

_____

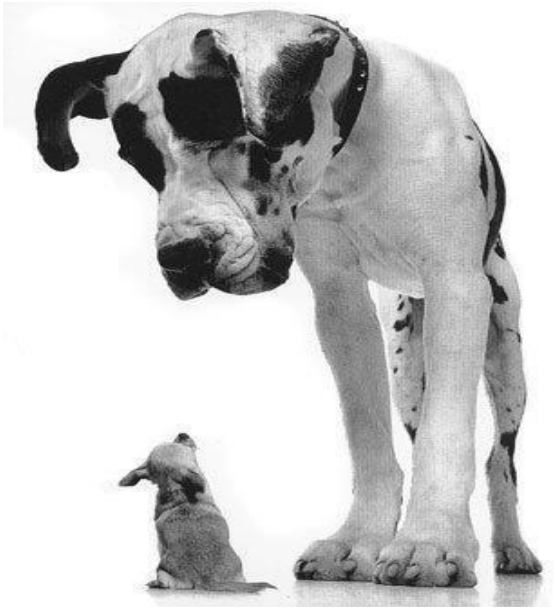
_____ **(1 Mark)**

12. State any one mode of transmision in diarrhoea disease

_____

_____ **(1 Mark)**

13. Figure 10 shows a diagram of two adult dogs labelled L and K of the same age and preoduced from a common ancestor. Use it to answer the questions that follow.



K L

(a) Write two variation that you can observe between them

_____

_____ **(1 Mark)**

(b) Suggest the cause of the variation between them

_____

_____ **(1 Mark)**

(c) A certain wing abnormality in an insect is caused by a single gene which is recessive to the normal gene. Using **A** to represent the normal gene and **a** to represent the abormal gene. Write the genoype experted of the insects

SECTION B ESAAY QUESTIONS

14. Describe the breathing mechanism in human being.

Explain five types of tropism in plant response

15. Explain any five ways of comparing dialysis machine and kidney