NAME: …….. ADM NO: …….. CLASS: …….
ANESTAR SCHOOLS
231/2
BIOLOGY
FORM TWO
END YEAR EXAM – 2022
TIME: 2 ½ HOURS

ANSWER ALL QUESTIONS

1. (i) The Scientific name of confused beetle is **TRIBOLIUM CONFUSAM**. Identify any three Mistakes made in writing the name. (3marks)

   (ii) What taxonomic group does the name CONFUSAM refer to? (1mrk)

2. . (a) Explain why specimens are important in studying biology. (1mark)

   (b) Identify an apparatus that is effective in capturing:
   (i) A scorpion. (1mark)

   (ii) Butterfly (1 mark)

3. (i) Identify an organelle that is most abundant in the proximal convoluted tubule. (1 mark)

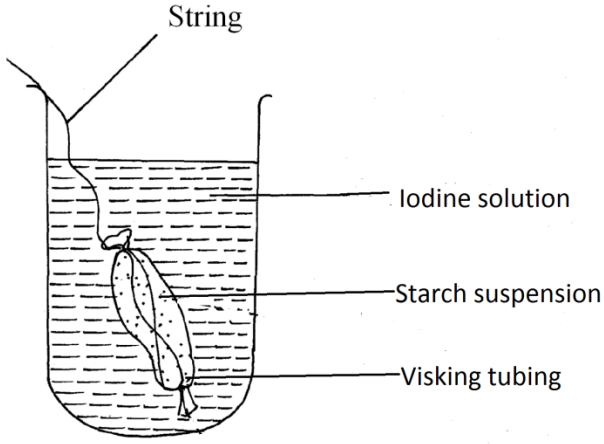
   (ii) Give a reason for your answer in (a) above. (1 mark)

4. a) Using a microscope, a student counted 55 cells across a field of view whose diameter was 6000µm. Calculate the average length of the cells. **Show your working**. (3marks)

(b) State the function of the following parts of a light microscope
Fine adjustment knob. (1mark)

Condenser (1mark)

. An investigation was performed by a group of students as shown in the set up below.



5. After 30 minutes, the starch suspension had turned blue-black while iodine solution retained its colour.
(a) Name the physiological process that was being investigated in the experiment. (1mrk)

(b) Account for the results observed after 30 minutes. (3marks)

(c) Explain what would happen to a red blood cell when placed in distilled water and left to stand for the same duration as for the experiment above. (3marks)

d) Define cell physiology. (1mark)

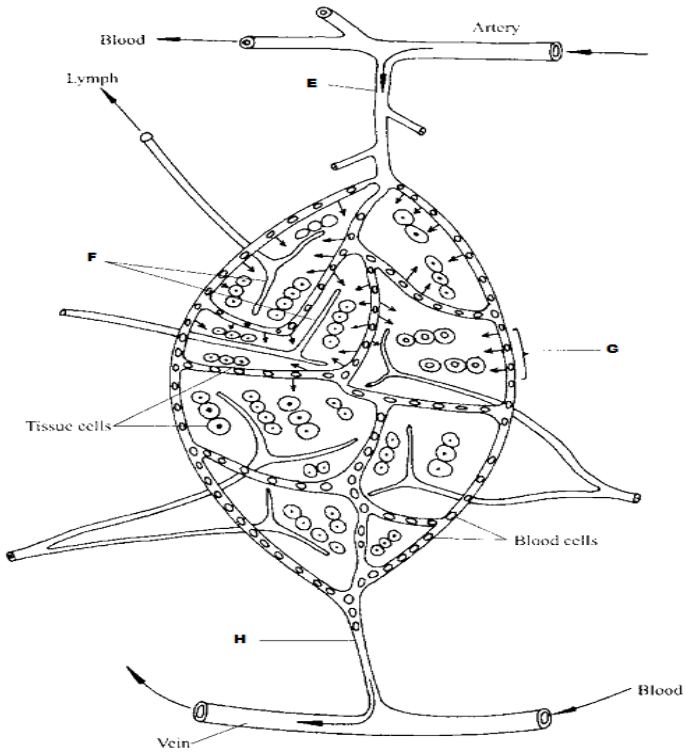
6. State two types of mechanical digestion along the digestive tract. (2marks)

6. Name two organisms that exhibit symbiotic relationship and explain how each benefits from the association. (2marks)

7. Describe how the following structures lower the rate of transpiration;
   (i) Sunken stomata. (2marks)

   (ii) Hairy leaf. (2mark)

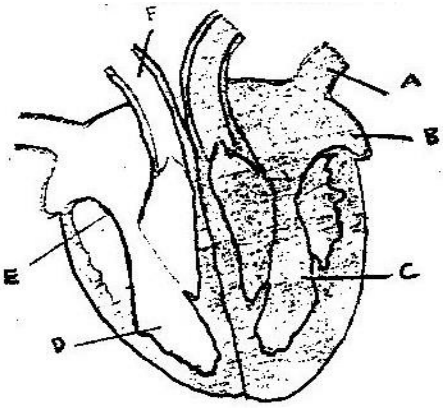
8. Study the diagram below and answer questions that follow.



a) Identify the parts labeled E, F and H. (3marks)

b) State the importance of the process represented by G in bodies of living organisms. (2marks

9. The diagram below shows a vertical section through a mammalian heart.



a. Name the parts labelled A, B, E and F (4 marks)

A……..

B……..

E…….

F…….

b. Use arrows to show the direction in which blood flows in the heart. (2 marks)

c. Give a reason why the wall of chamber C is thicker than chamber D (2mrks)

10.) Define the term respiration. (2mrks)

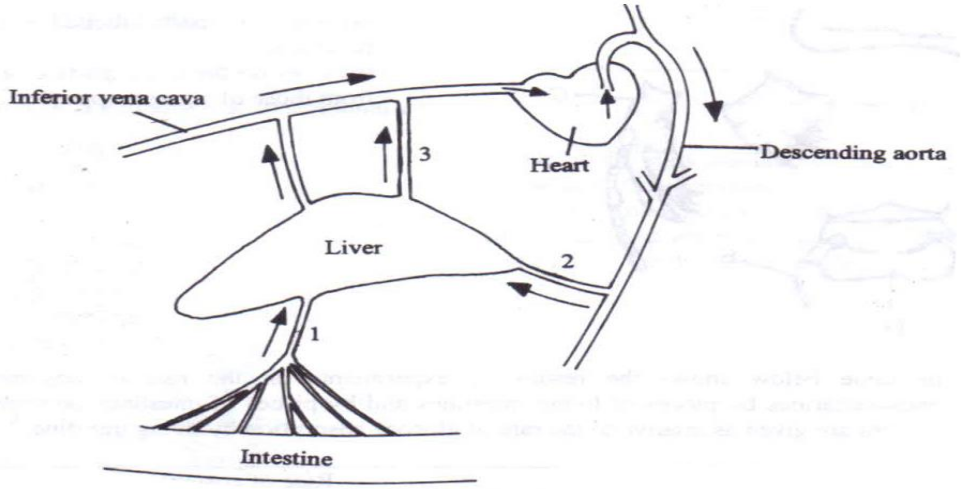
ii) Name, draw and label the structure of the organelle which is the site for respiration. (6mrks)

iii) Distinguish between aerobic and anaerobic respiration (6mrks)

11. Name two kidney diseases (2mrks)

12. .Explain why glucose and protein are present in urine. (2mrks)

13. . The figure below illustrates the blood supply and drainage of the liver



In which of the vessels labelled 1, 2 and 3 would you expect the highest concentration of glucose after an overnight of fast? Give a reason. (3marks)

14. The rates of gaseous exchange by different respiratory surfaces of plants were determined and recorded in the table below.

Structure	Gaseous exchange in %
A	89
B	3
C	0.3

Suggest the possible plant structure represented by A, B, C. (3 marks)

(a) Name the fluid that is produced by sebaceous glands. (1mark)

(b) What is the role of sweat on the human skin? (1mrk)

15. Explain what happens when there is oxygen debt in human muscles. (2marks)

16. Giving a reason in each case, name the class to which each of the following organisms belong: (4marks)

Pea plant:

Reason :

Bat:

Reason :

17. What do you understand by the term ecology. (2mrks)

18. Explain two beneficial effects of fungi (4mrks).

19. The diagram below represents a member of the kingdom Animalia.

(i) Name the phylum to which the organism belongs. (1mark)

(ii) Using observable features in the diagram, give three reasons for the answer in (i) above (3marks)