FORM 3 TERM 1 OPENER

BIOLOGY

NAME…………………………………………… ADM NO.……………..

CLASS……………………………………… SIGN……………………….

DATE………………………

DURATION: 2 HOURS

INSTRUCTIONS.

Answer all the questions in the spaces provided.

1. Name two external features found in class mammalia only.   (2mks)
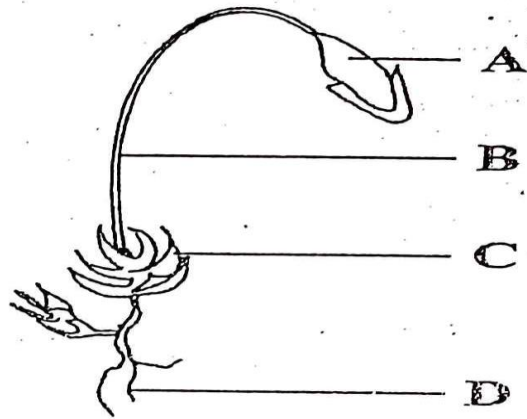
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b. Name the taxonomic unit that comes immediately after a phylum in classification. (1mk)
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2. The diagram below represents a plant in the division Bryophyta.

    i.   Name the parts labeled B and D.   (2mks)

    B

    D

    ii.   State one function of the parts labeled A and C.   (2mks)

    A

    C

3. A student collected an organism and observed the following features.

Simple eyes, four pairs of legs and two body parts.

    I.   State the class to which the organism belongs.   (1mk)

    II.   Give an example of an organism in this class.   (1mk)

    b. Name the kingdom to which plasmodium belongs.   (1mk)

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4. List the three branches of biology. (3mks)

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5. Give the formula used to calculate magnification in a light microscope. (1mk)

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b. Give the reasons for each of the following steps when preparing a cross-section of a stem or leaf for examination under the microscope. (3mks)
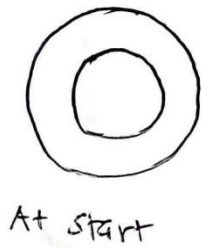
    I.   Cutting very thin sections

   II.   Using sharp razor blade during the cutting.

    III.   Placing sections in water

6. The diagrams below show a red blood cell that was subjected to a certain treatment.

At start

At the end of experiment

   a) Account for shape of the cell at the end of the experiment. (2mks)

   b) Draw a diagram to illustrate how a plant cell would appear if subjected to the same treatment. (1mk)

7. The diagram below represents a transverse section through a plant organ.
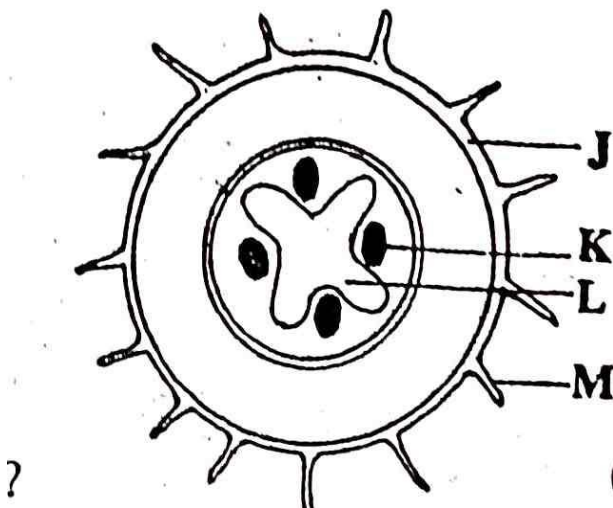
   a) From which plant organ was the section obtained. (1mk)

   b) Give two reasons for your answer in (a) above. (2mks)

c) Name the parts labeled J, K and L. (3mks)

J

K

L

8. Give two advantages of being a homoeotherm. (2mks)
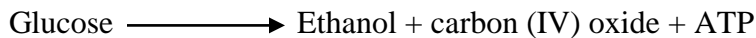
b. If a person's pancreas is not functional:

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i. What hormones may be deficient in the person? (2mks)

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ii. Name the disease the person is likely to suffer. (1mk)

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9. Study the word equation below.

Glucose $\longrightarrow$ Ethanol + carbon (IV) oxide + ATP

a) Name the process shown in the equation above. (1mk)

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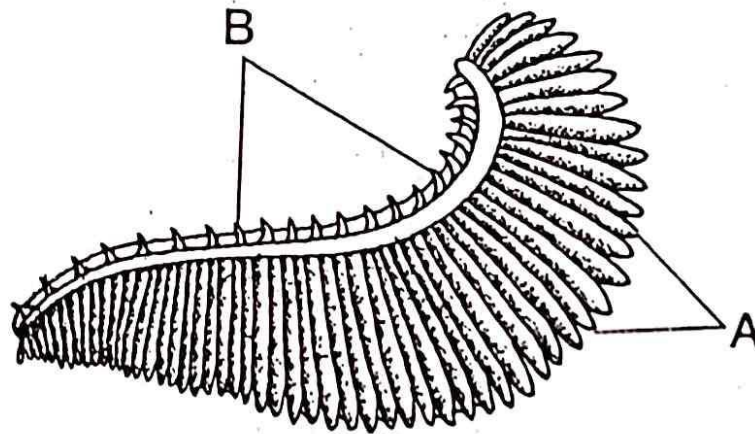
b) Suggest the organism(s) in which it takes place. (1mk)

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c) Give two application of the process in industry. (2mks)

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

a) Name the parts labeled A and B. (2mks)

A

B

b) How are the parts labeled A adapted to their functions. (3mks)

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11. State one function of each of the following cell organelles.

a) Golgi bodies (1mk)

b) Lysosomes   (1mk)

c) Ribosomes   (1mk)

12. The following is the dental formula of a certain mammal.

      i 0   c0   Pm3   m3
       3   1   3   3

a) State the likely mode of feeding for the mammal.   (1mk)

b) Give a reason for your answer in (a) above.   (1mk)
c) Name two dental diseases.   (2mks)

13. A person whose blood group is AB requires a transfusion. Name the blood groups of possible
donors.   (2mks)

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14. Name a vitamin, an enzyme and a mineral element that are involved in blood clotting.

(3mks)

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Vitamin

Enzyme

Mineral element

15. Name the process by which each of the following occurs.
    a) Molecules such as amino acids and glucose enter the body cell. (1mk)

    b) Glucose and mineral salts are re-absorbed into the blood in the kidney. (1mk)

    c) Water is absorbed from soil by root hairs. (1mk)

    d) Carbon (IV) oxide moves from the body cells to the blood capillaries. (1mk)

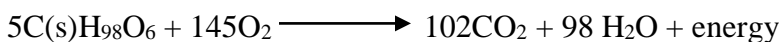16. The diagram below shows part of the respiratory system of a certain animal.
    a) Name the structure labeled A and state its functions. (2mks)
       Structure

       Function

    b) What is the advantage of the ringed structured labeled B. (1mk)

17. The equation below shows the oxidation reaction of food substances.
    $5C(s)H_{98}O_6 + 145O_2 \longrightarrow 102CO_2 + 98 H_2O + energy$

a. What do you understand by the term respiratory quotient? (1mk)

b. Determine respiratory quotient of the oxidation of food substance. (2mks)

c. Identify the food substances. (1mk)

18. Explain why pepsin in stomach of man is secreted in inactive form. (1mk)

b. Which gland secrets pepsinogen? (1mk)

c. The diagram below illustrated a physiological process that occurs in the alimentary canal of man.
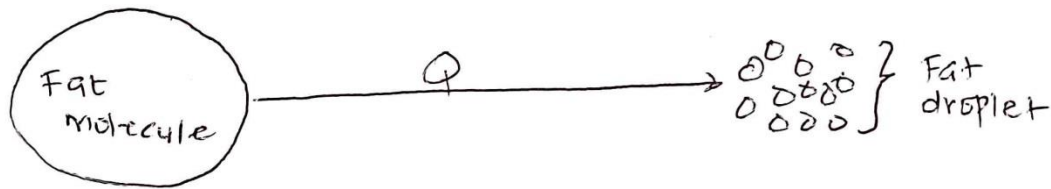
I. Name the process Q above. (1mk)

II. Explain the biological significance of the above process. (1mk)

III. Name the substance that helps the process named in (i) above. (1mk)

19. Besides venation, state two other external characteristics of leaves that can be used to classify plants. (2mks)

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WELCOME TO FORM THREE

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