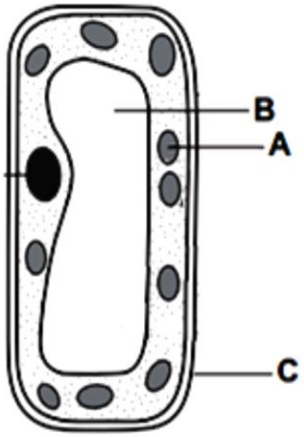
Student name _____ Class_____

School _____ ID_____ Academic year_____

Part One: Multiple Choice Questions

1. If the concentration of solution inside and outside the cell is the same, such environment is known as
   A. Hypotonic
   B. Hypertonic
   C. Isotonic
   D. Isomers
2. Which elements do proteins contains?
   A. Carbon, hydrogen, oxygen and magnesium
   B. Carbon, hydrogen and oxygen
   C. Carbon, hydrogen, oxygen and nitrogen
   D. Carbon, hydrogen, oxygen and zinc
3. The below diagram is about a plant cells. What is the function of structure **C**?

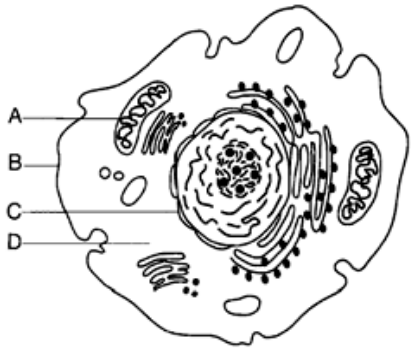
   A. Control center of the cell
   B. Keeps the cell turgid
   C. Controls cell activities
   D. Controls in and out of the cell



4. A good example of non-mineral elements are
   A. Carbon and nitrogen
   B. Carbon and potassium
   C. Carbon and phosphorus
   D. Carbon and hydrogen
5. The diffusion of water across cell membrane is called
   A. Active transport
   B. Facilitated diffusion
   C. Osmosis
   D. Diffusion

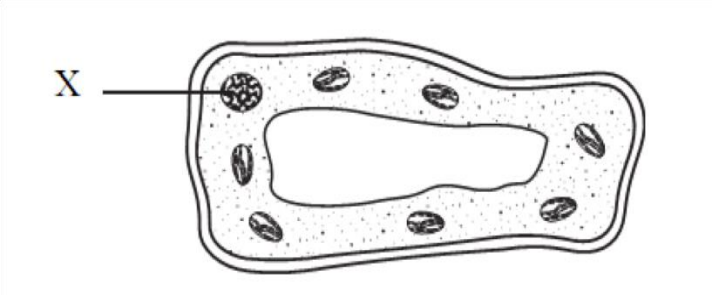
6. The below diagram is about an animal cell. What is the function of labeled structure **B**?

A. Site of chemical reactions in the cell
B. Control of cell reproduction
C. Control of substances in and out of the cell
D. Control of protein synthesis in the cell



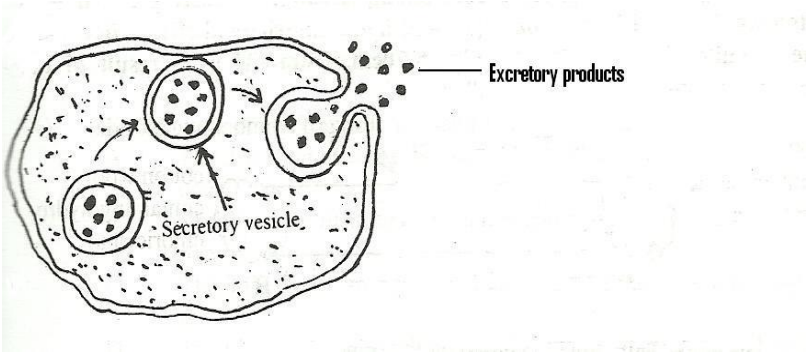
7. Which of the following macronutrients is important for making proteins in plants?
   A. Potassium
   B. Magnesium
   C. Calcium
   D. Nitrogen
8. Plant cells become turgid when placed in
   A. Strong solution environment
   B. Isotonic environment
   C. Hypertonic environment
   D. Hypotonic environment
9. Proteins are made up of small units called
   A. Monosaccharides
   B. Fatty acids
   C. Glucose
   D. Amino acids
10. The most common types of lipids are
    A. Fats and amino acids
    B. Fats and glucose
    C. Amino acids and oil
    D. Fats and oil
11. Which mechanism requires energy?
    A. Active transport
    B. Facilitated diffusion
    C. Osmosis
    D. Diffusion
12. Enzymes are made up of
    A. Carbohydrates
    B. Fats
    C. Lipids
    D. Proteins
13. A good example of mineral elements are
    A. Nitrogen and oxygen
    B. Nitrogen and carbon
    C. Nitrogen and hydrogen
    D. Nitrogen and phosphorus
14. The transport of materials out of the cell across the cell membrane is called
    A. Pinocytosis
    B. Phagocytosis
    C. Exocytosis
    D. Endocytosis
15. A good example of polysaccharides is
    A. Maltose
    B. Sucrose
    C. Starch
    D. Glucose

16. All the following are properties of monosaccharides, **except**
    A. Soluble in water
    B. Sweet
    C. Simple molecule
    D. Not sweet
17. The diagram below shows a cell.



The function of structure **X** is to
    A. control cell activities
    B. keep the cell turgid
    C. control entry and exit of material
    D. release energy from glucose
18. One difference between plant and animal cells is that animal cells have **no**
    A. Cell membrane
    B. Cytoplasm
    C. Cell wall
    D. Nucleus
19. A good example of disaccharides is
    A. Starch
    B. Glucose
    C. Fructose
    D. Lactose
20. All of the following are animal tissues, **except**
    A. Connective tissue
    B. Nervous tissue
    C. Vascular tissue
    D. Muscle tissue
21. Which elements do carbohydrates contain?
    A. Carbon, hydrogen, oxygen and sulphur
    B. Carbon, hydrogen, oxygen and nitrogen
    C. Carbon, hydrogen and oxygen
    D. Carbon, hydrogen and nitrogen
22. Plasmolysis takes place when a cell is kept in
    A. Isotonic environment
    B. Hypotonic environment
    C. Hypertonic environment
    D. Distilled water

23. Identify the below cell process



A. Pinocytosis
B. Endocytosis
C. Exocytosis
D. Phagocytosis

24. Unicellular organisms contain

A. Many cells
B. Two cells only
C. One cell
D. Four cells

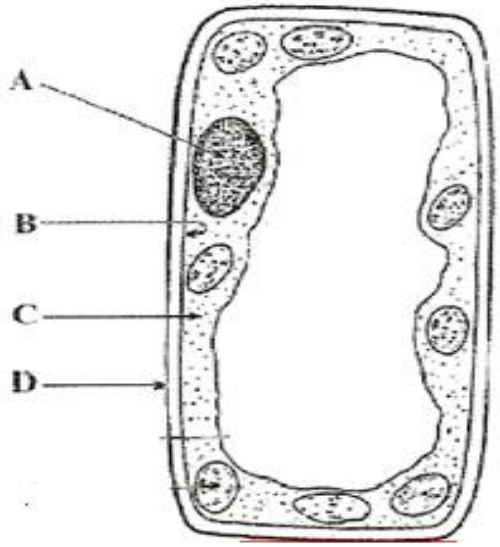
25. Ribosomes attach on

A. Cell membrane
B. Smooth ER
C. Cell wall
D. Rough ER

26. All the following are proteins **except;**

A. Hemoglobin
B. Enzymes
C. Glucose
D. Keratin

27. Which labeled structure shows the nucleus?



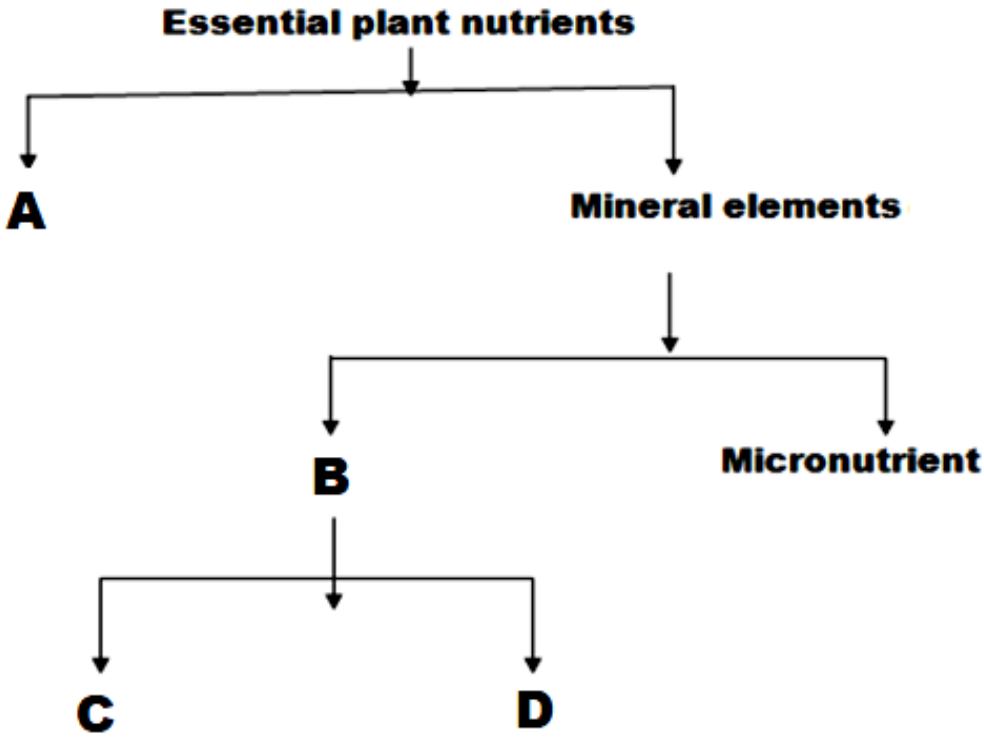
28. Which type of the below carbohydrates is the storage form of plants?
    A. Glycogen
    B. Glucose
    C. Starch
    D. Cellulose
29. Disaccharides are made up of
    A. Many monosaccharides joined together
    B. Only one monosaccharide
    C. Two monosaccharides joined together
    D. Many amino acids joined together
30. Movement of large molecules through the cell membrane with the help of protein channels is called
    A. Osmosis
    B. Diffusion
    C. Facilitated diffusion
    D. Passive transport

Part Two: Structured Questions

1. Define the below terms
   (a) Diffusion ……
   ……
   (b) Endocytosis ……
   ……
   (c) Phagocytosis ……
   ……
   (d) Pinocytosis ……..
   ……
   (e) Osmosis ……
   ……
   (f) Active transport ……....
   ……
   (g) Cell ……
   ……

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2. Study the below diagram is about classification of essential plant nutrients and answer the following questions.



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

A. ……

B. ……..

C. ……

D. ……..

(b) Give two examples of micronutrients

1. ……

2. ……

(c) What is the difference between macronutrients and micronutrients?

……

……

…….....

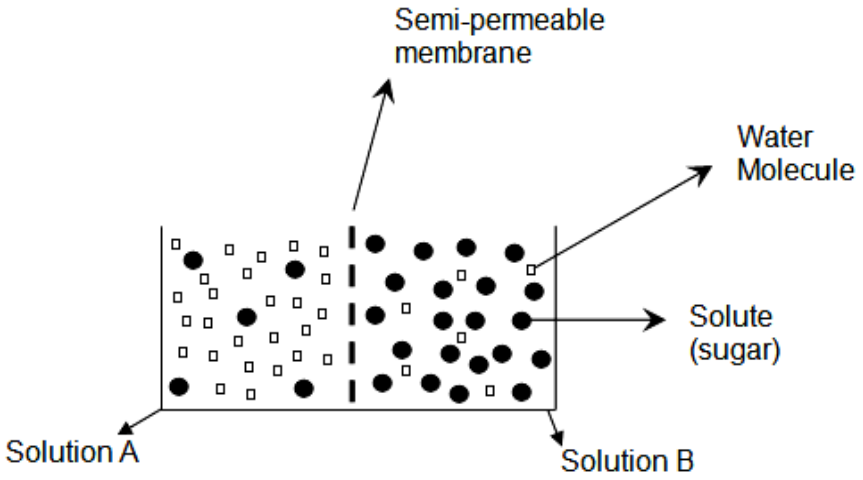
(d) List any three signs of macronutrient deficiencies in plants

i. ……

ii. ……

iii. ……..

3. Study the diagram below in which two solutions are separated by selectively permeable membrane and answer the following questions.



(a) Which solution has a higher concentration of water molecules?

……

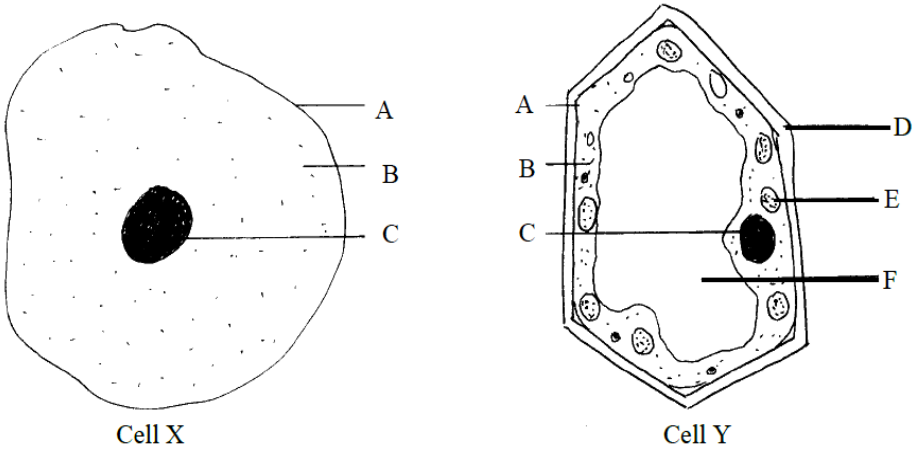
(b) Which solution has a higher concentration of sugar?

……..

(c) In which direction will water move

……..

4. The diagrams below show a plant cell and an animal cell.



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

A. ……..

B. ……..

C. ……..

D. ……

F……

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5. What are the functions of the cell structures
   (a) Cell membrane _____
   (b) Cytoplasm _____
   (c) Rough ER _____
   (d) Nucleus _____
   (e) Mitochondria _____
   (f) Centrioles _____
   (g) Lysosomes _____
   (h) Cell wall _____
   (i) Chloroplast _____
   (j) Chlorophyll _____
   (k) Smooth ER_____

6. The two types of respiration which occur in the cells of living organisms are aerobic and anaerobic respiration.

(a) Complete the below chemical equation of aerobic respiration

$C_6H_{12}O_6 + 2O_6 \longrightarrow$ ..... + ... + 2830kj

(b) What is the difference between aerobic and anaerobic respiration?

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

(c) Write down the word equation of aerobic respiration

..... + ... ⟶ ..... + ... + Energy

(d) Define the term respiration

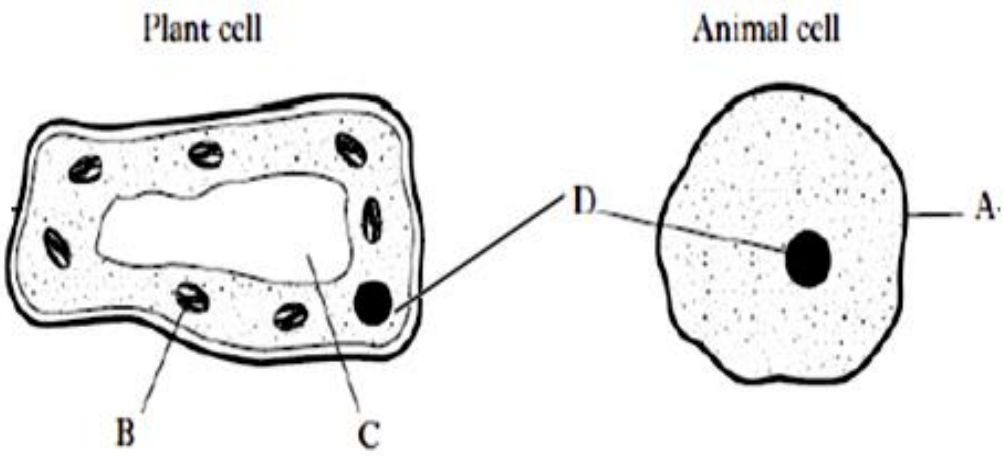
.....
.....

(e) Where does aerobic and anaerobic respiration take place in the cell

.....
.....

7. Name the cell organelles performed by the following functions
   i. Power house of the cell_____
   ii. Protein factor of the cell_____
   iii. Control center of the cell_____
   iv. Transport proteins in the cell _____

1. The diagram below shows two cells.



(a) Complete the table below to show the names and functions of the labeled parts

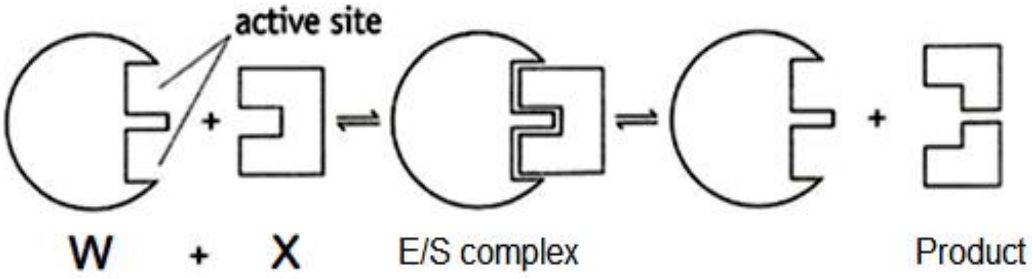
Part	Name	Function
A		Control of substances in and out of the cell
B	Chloroplast	
C		Storage
D	Nucleus	

(b) Give **one** difference and **one** similarity in the structure of plant and animal cells

Difference: _____

Similarity: _____

8. The below figure is about a biological catalyst on a reaction



(a) Name the labeled structures '**W**' and '**X**'

W: ……..

X: …….

(b) State any two properties of enzymes

1. …….
2. ……

(c) What is the optimum temperature which enzymes in human body require?

……

(d) If the temperature increases above optimum temperature of human enzymes, what happens to the

i) Enzymes …….

ii) Rate of reaction ……

(e) Enzyme activity is affected by both temperature and pH number. Distinguish between optimum temperature and optimum pH

……

……

……

……

END…