NAME: _____ **GRADE: 10**

JOHN GRAY HIGH SCHOOL

UNIT TEST

CELLS AND TRANSPORT OF MOLECULES

CSEC BIOLOGY

PAPER 01

45 MINUTES

INSTRUCTIONS TO CANDIDATES

1. This paper consists of FORTY (40) Multiple Choice items.
2. You have 45 minutes to answer them.
3. Each item in this test has four suggested answers, lettered (A), (B), (C), and (D).
4. Read each item you are about to answer, and decide which choice is best.
5. Circle the LETTER of the answer you have chosen.
6. You may do rough work in the booklet.
7. **RETURN THE QUESTION PAPER AT THE END OF THE EXAM.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

LIVEWORKSHEETS

1. Which of the following have both cytoplasm and cell walls?

   A. Muscle cells
   B. Red blood cells
   C. Root hair cells
   D. Xylem vessels

2. Which is an example of active transport?

   A. Movement of glucose into red blood cells
   B. Movement of glucose molecules from high to low concentration
   C. Movement of oxygen in blood plasma
   D. Movement of water into plant roots

3. A. young plant may wilt when dug up and re-planted in another place. What causes this?

   A. The leaves lose less water.
   B. The roots cannot take up mineral salts.
   C. The stem cannot transport water.
   D. The surface area of the root is reduced.

4. What causes water to enter plant roots from the soil?

   A. Water concentration in root hairs and the soil is equal.
   B. Water concentration in root hairs and xylem is equal.
   C. Water concentration in root hairs is higher than in the soil.
   D. Water concentration in root hairs is lower than in the soil.

5. Which two structures are found only in plant cells?

   A. Cell wall and large vacuole
   B. Chloroplast and cell membrane
   C. Cytoplasm and cell membrane
   D. Nucleus and large vacuole

6. Which of the following enters plant cells by active transport?

   A. Carbon dioxide
   B. Nitrate ions
   C. Oxygen
   D. Water

7. Which does NOT contain cytoplasm?

   A. Red blood cells
   B. Xylem vessels
   C. Mesophyll cells
   D. Liver cells

8. Which structures are found in animal cells and in plant cells?

   A. Cell membrane and chloroplasts
   B. Cell membrane and nucleus
   C. Cell wall and chloroplasts
   D. Cell wall and nucleus

9. What is the function of each type of plant cell?

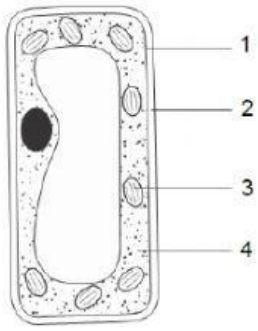
	Mesophyll cells	Phloem cells	Root hair cells
A	photosynthesis	sugar transport	mineral uptake
B.	photosynthesis	sugar transport	transpiration
C.	transpiration	photosynthesis	mineral uptake
D.	transpiration	photosynthesis	sugar transport

10. 'Movement of molecules against a concentration gradient, using energy from respiration' is called _____.

    A. osmosis
    B. active transport
    C. diffusion
    D. mass flow

LIVEWORKSHEETS

11. The diagram shows a cell.



Which numbers show the parts named?

	Cell membrane	Cell wall	Cytoplasm
A.	1	2	3
B.	1	2	4
C.	2	1	3
D.	2	1	4

12. The diagram shows three different cells, not drawn to the same scale.

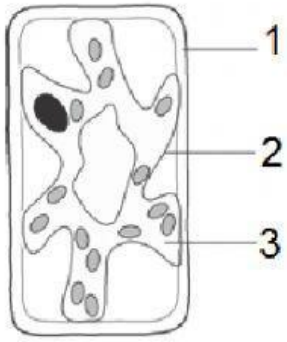


Which are animal cells?
A. 1 and 2 only
B. 1 and 3 only
C. 2 and 3 only
D. 1, 2 and 3

13. Which of the following statements about a typical plant cell is **not** correct?

A. Has no mitochondria
B. Has large vacuoles
C. Has chloroplasts
D. Stores oxygen

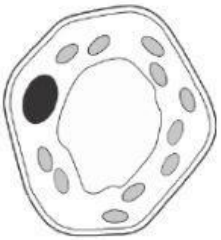
14. The diagram shows a typical plant cell after being placed in a concentrated salt solution for ten minutes.



Which numbered structures are partially permeable?

A. 1 and 2 only
B. 1 and 3 only
C. 1 only
D. 2 only

15. The diagram shows one type of plant cell.



What type of cell is it?
A. Epidermal cell of a leaf
B. Mesophyll cell of a leaf
C. Root hair cell
D. Xylem cell

16. Which of the following statements about a typical animal cell is **not** correct?

A. Has a nucleus
B. Has small vacuoles
C. Has a cell wall
D. Has no chloroplasts

LIVEWORKSHEETS

17. Which of the following do not contain chromosomes?

A. White blood cells
B. Phloem cells
C. Red blood cells
D. Mesophyll cells

18. The diagram represents a cell as seen under the electron microscope.



What type of cell is this?

	Type of cell	Reason
A	animal cell	Cell membrane is outer layer
B.	bacterium	no chromosomes are visible
C.	plant cell	cytoplasm is visible
D.	plant cell	cell wall is visible

19. Which of the following is NOT an organ?

A. A finger
B. The heart
C. A protist
D. The stomach

20. Where and how does carbon dioxide enter a plant?

	Where	How
A	root hair cells	active uptake
B.	root hair cells	diffusion
C.	stomata	active uptake
D.	stomata	diffusion

Items 21 – 24 refer to the following information.

The group below consists of four lettered headings followed by five numbered phrases. For each numbered phrase, select one heading which is most closely related to it. Each heading may be used once, more than once or none at all.

A. Nucleus
B. Ribosome
C. Mitochondrion
D. Cell membrane

21. Makes protein for the cell _____

22. Controls the passage of materials into the cell_____

23. Controls the activities of the cell_____

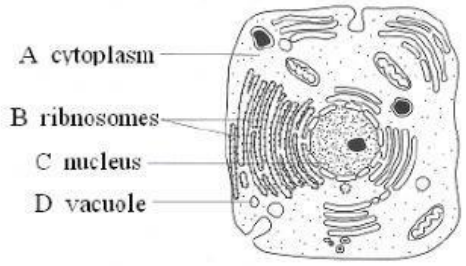
24. Provides the cell with energy_____

25 Which of the following is NOT a function of roots?

A. Making food.
B. Taking in water.
C. Taking in mineral salts.
D. Anchoring the plant in the soil.

LIVEWORKSHEETS

Questions 26 and 27 *refer to the following diagram of a typical animal cell.*



26. Which labelled region is responsible for the manufacture of cellular proteins?_____

27. Which labelled region is responsible for determining which proteins are to be made?

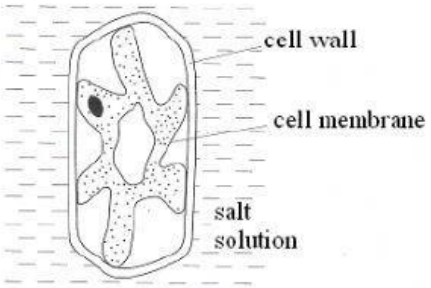
28. Osmosis in living organisms may be described as the net movement across a partially permeable membrane of _____.

A. solute molecules from a weak solution to a strong solution
B. solute molecules from a strong solution to a weak solution
C. water molecules from a weak solution to a strong solution
D. water molecules from a strong solution to a weak solution

29 Plasmolysis would occur in a plant cell if the cell was left in_____.

A. distilled water.
B. a sugar solution less concentrated than cell sap.
C. a salt solution more concentrated than cells sap.
D. a mixture with blood cells and water.

Questions 30 and 31 *refer to the figure of the plant cell below.*



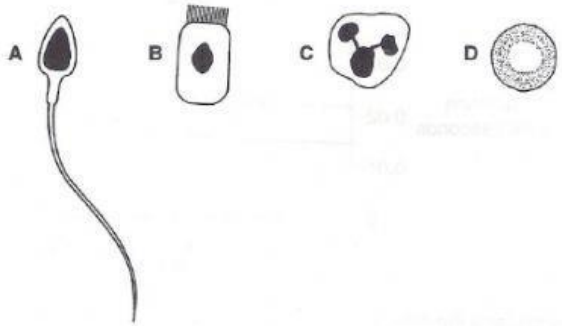
30. What is the name of the process that has caused the cell membranes to pull away from the cell wall in such a way?

A. Dehydration B. Transpiration
C. Plasmolysis D. Evaporation

31. This experiment is showing proof of what natural, biological process?

A. Diffusion
B. Active transport
C. Osmosis
D. Evaporation

Questions 32 and 33 *refer to the diagrams of specialized cells below.*

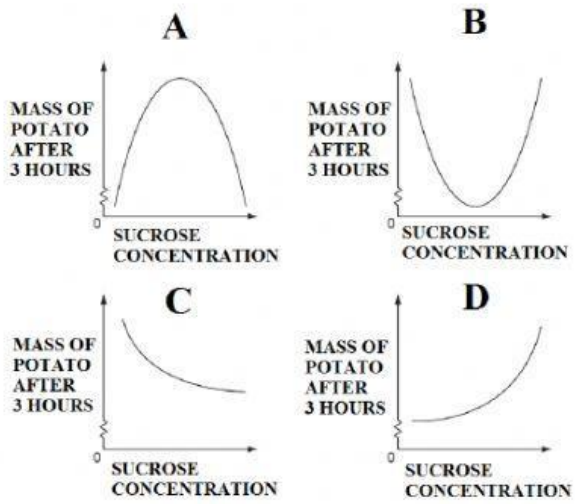


32. Which of the cells below would you most likely find at the site of a cut?_____

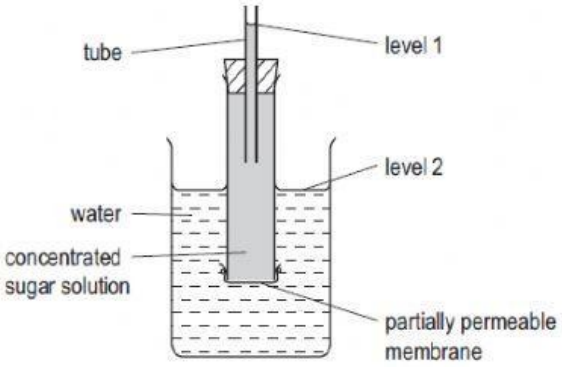
33. Which of the cells is most likely to be found lining the inside of the nostrils?_____

LIVEWORKSHEETS

34 Identical pieces of potato are placed in sugar solutions of different concentrations. After three hours, the mass of each potato piece is measured. Which graph shows the results of this experiment?



35 The diagram shows apparatus used to investigate osmosis.



Which molecules will move across the partially permeable membrane and which changes in levels will occur?

	molecules	level 1	level 2
A	sugar	fall	rise
B	water	fall	rise
C	sugar	rise	fall
D	water	rise	fall

36 The table shows some characteristics of four types of cells. Which cells could be a root hair cell?

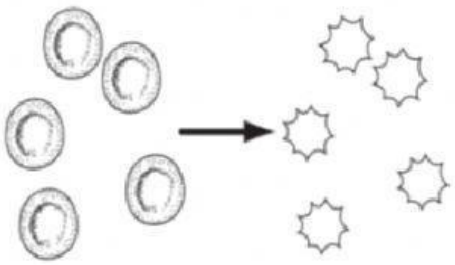
	nucleus	chloroplast
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

key

✓ = present

✗ = absent

37 The diagram shows cells in fresh blood before and after they were mixed with Liquid X.



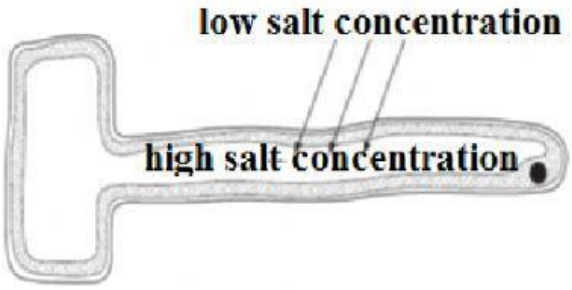
fresh blood **fresh blood after Liquid X**

What could be true about Liquid X?

A. Liquid X is pure water.
B. Liquid X has more salt than in the blood cells.
C. Liquid X has less salt than in the blood cells.
D. Liquid X is toxic.

LIVEWORKSHEETS

38 The arrows show the movement of salts into a cell.



Which describes the movement of salts?

A. Active transport against the concentration gradient.
B. Active transport down the concentration gradient
C. Diffusion against the concentration gradient
D. Diffusion down the concentration gradient

39 Which process requires energy made during respiration?

A. Movement of oxygen into red blood cells.
B. Movement of carbon dioxide into stomata.
C. Movement of glucose into red blood cells.
D. Movement of water into plant roots.

40 Cytoplasm _____.

A. is only found in animal cells.
B. is the place where chromosomes are found in animal cells.
C. contains only a little water.
D. is jelly-like and keeps organelles in place.

LIVEWORKSHEETS