

CELL BIOLOGY

Name: KEY
Date: _____



Chapter 7 Test: The Cell

7.1 Life is Cellular (8pt)

- A Anton van Leeuwenhoek a) First to find microorganism
- E Robert Hooke b) Concluded all animals are made of cells
- C Matthias Schleiden c) Concluded all plants are made of cells
- B Theodor Schwann d) Concluded all cells come from pre-existing cells
- D Rudolph Virchow e) Coined the term "cells"

2010

11th

A: 36

M: 40

H: 52

2014
A: 37 (40+34)

H: 51

12th

A: 42

M: 43

H: 46



6. According to Cell Theory, all living organisms are made of cells which are the basic units of structure and function. Also new cells arise from pre-existing cells.

7. A cell that does not contain a nucleus is called a prokaryote.

8. Name 2 things that a plant cell has that an animal cell does not have: cell wall & vacuole, chloroplast

7.2 Cell Structures (16pt)

a) If the organelle would do something in a "factory", what would it do?

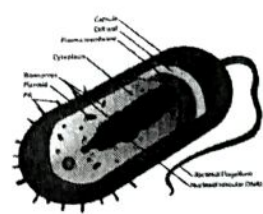
b) Describe its function

9. Mitochondrion. Factory Role: Power Plant
Cell Function: energy for cell

10. Golgi Apparatus. Factory Role: Packaging/shipping
Cell Function: Packages/ships proteins

11. Chloroplast. Factory Role: Kitchen
Cell Function: makes sugars

12. Vacuole. Factory Role: Storage unit
Cell Function: stores



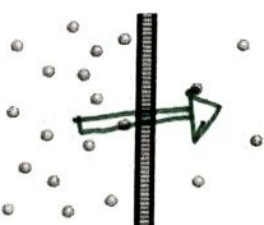
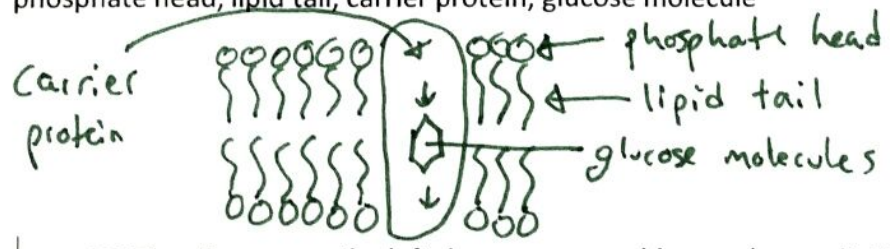
13. Lysosome. Factory Role: recycling plant
 Cell Function: recycles organic material
14. Ribosome. Factory Role: assembly line
 Cell Function: makes protein
15. Nucleolus. Factory Role: engineering
 Cell Function: makes ribosomes
16. Chromatin. Factory Role: blueprints
 Cell Function: instructions for making proteins

Microscope Lab (2pt)

17. What type of specimen was Robert Hooke looking at when he made his important discovery? Cork
18. Where in the body could you easily find epithelial cells for a slide? Cheek

7.3 How Materials Enter/Leave the Cell (16pt)

19. (2pt) Draw a section of the plasma membrane. Label the following parts: phosphate head, lipid tail, carrier protein, glucose molecule



20. The diagram on the left shows a permeable membrane dividing two solutions. Draw an arrow depicting which way the movement of diffusion would occur.

21. Explain why you drew the arrow that direction in the last question. high [] to low []

22. (2pt) Circle which of the following molecules can diffuse easily through a cell membrane (not facilitated diffusion): small, neutral

Na⁺ C₆H₁₂O₆ C₈H₁₁NO₂(dopamine) NO₂⁻ O₂ Cl⁻ NO₃
H₂O SO₄⁻² C₁₇H₂₁NO₄(cocaine) NH₃ NH₄⁺ H⁺



23. (2pt) Define osmosis. Be exact. diffusion (high [] to low []) of water through semi-permeable membrane

24. A cell is placed in a solution. A few hours later, it is observed that the cell is larger and is at the point of bursting (which could happen). What type of solution is it in?

hypotonic solution

25. Explain what causes the cell to burst at the seams in the previous question.

water enters cell

26. How does placing salt on a slug cause it to die?

water leaves slug cells → causing death

27. Glucose molecules are too big to enter the cell by means of diffusion. How does a cell get this essential energy source inside of the cell membrane?

carrier protein - facilitated diffusion or phagocytosis

28. What process allows potatoes to keep more minerals inside of the root compared to in the surrounding soil?

Active Transport

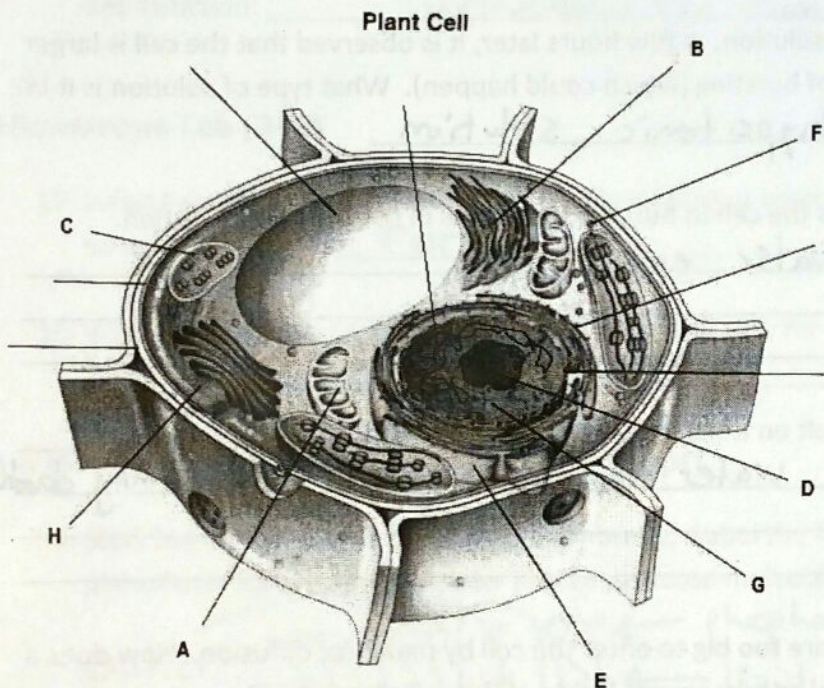
29. How does the process in the previous question differ from diffusion?

AT is low [] → high []

30. Compare AND contrast pinocytosis and phagocytosis. Enter cell (endocytosis)
small (liquid) large (solid)

31. Define exocytosis. purging cell of molecules/materials
(exiting cell)

Plant Cell Diagram (8pt) - Label the parts below (no abbreviations)



32. A is the mitochondrion(ia)
 33. B is the smooth endoplasmic reticulum (contains enzymes)
 34. C is the chloroplast (green)
 35. D is the nucleolus
 36. E is the rough endoplasmic reticulum
 37. F is the ribosome (dot)
 38. G is the nucleus
 39. H is the golgi apparatus

EC. The enzyme in our body that speeds CO₂ dissolution is called carbonic anyhydr ase.