Chapter 03
Cells

Multiple Choice Questions

1. About how many cells comprise the body of an adult?
A. 50 to 100 million
B. 50 to 100 billion
C. 50 to 100 trillion
D. 50 to 100 quadrillion
E. is isn't known

Difficulty Level: Remember/Understand
Learning Outcome: 03.01
Topic: Cells

2. Cells are measured in
A. centimeters.
B. micrometers.
C. nanometers.
D. milliliters.
E. molecular units.

Difficulty Level: Remember/Understand
Learning Outcome: 03.01
Topic: Cells

3. The three major parts of a cell are
A. the ER, Golgi apparatus, and vesicles.
B. the nucleus, nucleolus, and nuclear envelope.
C. microtubules, ribosomes, and centrosomes.
D. the mitochondria, microtubules, and microfilaments.
E. the nucleus, cytoplasm, and cell membrane.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

4. A selectively permeable membrane
A. allows all substances to pass through.
B. allows all organic substances to pass through but excludes all inorganic substances.
C. allows some substances to pass through and excludes others.
D. falls apart locally so that any nearby molecules can get through.
E. forms a bubble that engulfs incoming molecules.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

5. The major components of the cell membrane are
A. lipids and carbohydrates.
B. proteins and carbohydrates.
C. lipids and proteins.
D. carbohydrates and polysaccharides.
E. proteins and peptides.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

6. The cell membrane
A. maintains the integrity of the cell.
B. controls the entry and exit of various substances.
C. provides a barrier to water-soluble substances.
D. contains cholesterol.
E. all answer choices are correct

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

7. Which of the following correctly describes the structural organization of the cell membrane?
A. A solid, rigid layer of phospholipid with loosely bound protein molecules
B. A bilayer of phospholipid molecules in which protein molecules are embedded and can move
C. Rigid layers of protein molecules in which carbohydrate molecules are suspended
D. Three layers; lipid on the inside, protein in the middle, and carbohydrates (and polysaccharides) on the outside
E. A protein bilayer with lipids embedded in a different pattern in different cell types.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

8. A protein that spans the cell membrane is termed a(n)
A. receptor protein.
B. integral protein.
C. peripheral protein.
D. anchoring protein.
E. essential protein.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

9. Cellular adhesion molecules are
A. peripheral proteins.
B. integral proteins.
C. lipids.
D. receptors.
E. anchoring proteins.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

10. Endoplasmic reticulum is best described as a
A. liquid.
B. cellular inclusion.
C. nuclear pore.
D. component of the cytoskeleton.
E. network of interconnected membranes.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

11. Vesicles are formed from
A. lysosomal membrane.
B. nuclear membrane.
C. cell membrane.
D. endoplasmic reticulum.
E. none of the above.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

12. Which of the following describes a lysosome?
A. A double-membraned organelle that is the "powerhouse" of the cell.
B. A complex network of interconnected membranes that is a communication system in the cell.
C. A tiny, membranous sac that contains enzymes that degrade worn cell parts and debris.
D. A nonmembranous structure that is essential for mitosis.
E. A bilayer of lipid in which proteins are embedded.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

13. A young man who ran 6 miles a day throughout high school is injured during his first season running cross country in college, and must rest for three months, then gradually begin exercising again. The skeletal muscle size in his lower limbs decreases during this prolonged period of inactivity. The organelles that break down his muscle protein are
A. peroxisomes.
B. lysosomes.
C. centrosomes.
D. ribosomes.
E. nuclei.

Difficulty Level: Apply/Analyze
Learning Outcome: 03.02
Topic: Cells

14. For which of the following organelles is the structure and function correctly described?
A. Endoplasmic reticulum-network of interconnected membranes forming sacs and canals; packages protein molecules for secretion
B. Ribosomes-membranous vesicles; contain digestive enzymes
C. Golgi apparatus-particles composed of protein and RNA; synthesizes proteins
D. Mitochondrion-nonmembranous structure that synthesizes proteins
E. Nucleus-a bubble that holds secretions.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

15. The sequence of organelles and cell parts that a secretion encounters is
A. cell membrane, vesicles, Golgi apparatus, ER, nucleus.
B. nucleus, ER, Golgi apparatus, vesicles, cell membrane.
C. nucleus, nucleolus, nuclear envelope, cell membrane.
D. vesicles, Golgi apparatus, mitochondrion, cell membrane.
E. mitochondrion, vesicles, Golgi apparatus, ER, cell membrane.

Difficulty Level: Apply/Analyze
Learning Outcome: 03.02
Topic: Cells

16. The organelle where energy is captured and stored in the chemical bonds of ATP is a
A. mitochondrion.
B. ribosome.
C. peroxisome.
D. Golgi apparatus.
E. nucleus.

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

17. The main function of cristae is to
A. supply enzymes for reactions.
B. increase chemical transport in mitochondria.
C. facilitate diffusion of substances into the mitochondria.
D. decrease the surface area for chemical reactions.
E. increase the surface area for chemical reactions.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

18. In a cell, lipids are synthesized in the
A. Golgi apparatus.
B. smooth ER.
C. rough ER.
D. liver.
E. stomach.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

19. Cytoskeletal structures that are not found in all cell types are
A. microtubules.
B. microfilaments.
C. intermediate tubules.
D. intermediate filaments.
E. fibrous filaments

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

20. DNA molecules are in the nucleus
A. as free molecules.
B. complexed with protein, forming chromatin fibers.
C. complexed with protein, forming nucleoli.
D. complexed with protein on the nuclear envelope.
E. broken into thousands of pieces.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

21. The nucleolus contains
A. DNA only.
B. RNA and protein.
C. DNA and protein.
D. protein and ribosomes.
E. gelatin.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

22. The function of the nucleus is to
A. direct the activities of the cell.
B. form mitochondria.
C. transfer energy.
D. provide cell shape.
E. allow substances to move in and out of cells.

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

23. Which organelle contains the nucleolus?
A. the mitochondrion.
B. the ER.
C. the Golgi apparatus.
D. the nucleus.
E. the vacuole.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

24. Which of the following does not influence the rate of diffusion?
A. Distance
B. The concentration of the substance
C. The amount of energy available for transport molecules
D. The molecular weight of the diffusing molecules
E. Hunger

Difficulty Level: Evaluate/Create
Learning Outcome: 03.03
Topic: Cells

25. What characteristic do simple diffusion and facilitated diffusion share?
A. Both require cellular energy for the transport of substances.
B. Both move water across a semipermeable membrane.
C. Both require a special carrier molecule to move substances across the membrane.
D. Both move a substance from a region of higher concentration to one of lower concentration without cellular energy.
E. Both require ATP.

Difficulty Level: Apply/Analyze
Learning Outcome: 03.03
Topic: Cells

26. If the concentration of glucose in the water outside of a cell is higher than the concentration inside,
A. water will enter the cell by osmosis.
B. water will leave the cell by osmosis.
C. glucose will enter the cell by osmosis.
D. glucose will leave the cell by osmosis.
E. glucose will polymerize to form glycogen.

Difficulty Level: Apply/Analyze
Learning Outcome: 03.03
Topic: Cells

27. If a red blood cell is placed in a hypotonic solution
A. the cell will shrink.
B. the cell will disappear.
C. nothing; the cell will remain the same size and shape.
D. only permeable substances leave; otherwise concentrations in the cell do not change.
E. the cell will swell and may eventually burst.

Difficulty Level: Apply/Analyze
Learning Outcome: 03.03
Topic: Cells

28. Which of the following is isotonic to red blood cells?
A. 0.9% NaCl solution
B. Distilled water
C. 0.9% glucose solution
D. Alcohol
E. None of the above

Difficulty Level: Apply/Analyze
Learning Outcome: 03.03
Topic: Cells

29. Cells lose water when placed in a _____ solution.
A. hypotonic
B. hypertonic
C. isotonic
D. Ringer's lactate
E. water

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

30. Osmosis is the movement of
A. molecules from a high concentration to a low concentration.
B. water molecules from a high concentration to a low concentration through a selectively permeable membrane.
C. water molecules from a low concentration to a high concentration through a selectively permeable membrane.
D. ions from a low pressure region to a high pressure region through a selectively permeable membrane.
E. water molecules from a high concentration to a low concentration through an unselectively permeable membrane.

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

31. The relationship of osmotic pressure and the number of solute particles in a solution is the
A. lower the number of solute particles, the greater the osmotic pressure.
B. greater the number of solute particles, the lower the osmotic pressure.
C. greater the osmotic pressure, the lower the number of solute particles.
D. greater the number of solute particles, the greater the osmotic pressure.
E. none of the above.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.03
Topic: Cells

32. A hypertonic solution
A. has a greater concentration (number) of solute particles than do the cells in the solution.
B. would swell cells in the solution.
C. has a lower osmotic pressure than do the cells in the solution.
D. causes water to rush inside cells.
E. kills a cell.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.09
Topic: Cells

33. An isotonic solution
A. has a greater concentration of solute particles than a cell.
B. has more water entering than leaving a cell.
C. has the same osmotic pressure as the cells in the solution.
D. causes a cell to swell.
E. causes a cell to shrink.

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

34. A hypotonic solution
A. has a lower concentration (number) of solute particles than do the cells in the solution.
B. would cause cells in the solution to lose water.
C. has a higher osmotic pressure than do the cells in the solution.
D. kills the cell.
E. causes gaps to form in the cell membrane.

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

35. The movement of molecules through a membrane by filtration requires
A. osmotic pressure.
B. hydrostatic pressure.
C. atmospheric pressure.
D. light.
E. none of the above

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

36. Filtration is the movement of molecules through a membrane
A. from low concentration to high concentration.
B. from low to high hydrostatic pressure.
C. with the aid of a carrier protein.
D. from low osmotic pressure to high osmotic pressure.
E. by hydrostatic pressure that is greater on one side of the membrane than on the other.

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

37. In phagocytosis
A. a cell membrane engulfs solid particles.
B. a cell membrane temporarily comes apart.
C. a cell membrane engulfs droplets.
D. a carrier molecule moves a substance across a cell membrane using ATP.
E. a particle enters a cell by moving down its concentration gradient.

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

38. Molecules bind to receptor sites and are enclosed in vesicles in the process of
A. pinocytosis.
B. phagocytosis.
C. receptor-mediated endocytosis.
D. metabolism.
E. philiosis

Difficulty Level: Evaluate/Create
Learning Outcome: 03.03
Topic: Cells

39. Which of the following transport processes does not require expenditure of cellular energy?
A. Gross movement
B. Active transport
C. Pinocytosis
D. Phagocytosis
E. Facilitated diffusion

Difficulty Level: Apply/Analyze
Learning Outcome: 03.03
Topic: Cells

40. Chromosomes duplicate during
A. prophase.
B. interphase.
C. metaphase.
D. telophase.
E. geophase.

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

41. Stages of the cell cycle unfold in the following order:
A. differentiation, cytoplasmic division, mitosis, interphase
B. interphase, differentiation, cytoplasmic division, mitosis
C. interphase, mitosis, cytoplasmic division, differentiation
D. geophase, nucleophase, ciliophase, mitosis
E. none of the above

Difficulty Level: Evaluate/Create
Learning Outcome: 03.04
Topic: Cells

42. Centromeres of replicated chromosomes separate during mitotic
A. prophase.
B. metaphase.
C. anaphase.
D. telophase.
E. prometaphase

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

43. As a cell grows,
A. the relationship between its surface area and volume remains unchanged.
B. its surface area increases to a lesser degree than its volume.
C. its volume increases to a lesser degree than its surface area.
D. its requirement for nutrients increases to a lesser degree than its requirement for oxygen.
E. its DNA becomes converted to RNA.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.05
Topic: Cells

44. The average number of divisions that a human cell cultured in a dish can undergo is
A. 0.
B. 10-20.
C. 30-40.
D. 40-60.
E. 60-100

Difficulty Level: Remember/Understand
Learning Outcome: 03.05
Topic: Cells

45. The structures in the nucleus that serve as a "mitotic clock" are
A. timomeres.
B. kinases.
C. ribosomes.
D. hormones.
E. telomeres

Difficulty Level: Remember/Understand
Learning Outcome: 03.05
Topic: Cells

46. Cancer can result if
A. mitosis is too infrequent.
B. mitosis is too frequent or does not stop.
C. the cell cycle runs backward.
D. the cell cycle stops.
E. none of the above

Difficulty Level: Apply/Analyze
Learning Outcome: 03.05
Topic: Cells

47. The two types of genes that, when abnormal, cause cancer are
A. kinases and cyclins.
B. oncosuppressors and tumor activators.
C. metastatic activators and apoptosis stimulators.
D. tumor suppressors and oncogenes.
E. oncosuppressors and tumor kinetics

Difficulty Level: Remember/Understand
Learning Outcome: 03.05
Topic: Cells

48. The defining characteristic of a stem cell is
A. self-repair.
B. self-renewal.
C. the ability to turn into a cancer cell.
D. origin from a progenitor cell.
E. ability to be part of an embryo.

Difficulty Level: Remember/Understand
Learning Outcome: 03.06
Topic: Cells

49. A cell that can divide to give rise to any cell type is
A. pluripotent.
B. multipotent.
C. a progenitor cell.
D. a differentiated cell.
E. totipotent.

Difficulty Level: Remember/Understand
Learning Outcome: 03.06
Topic: Cells

50. Bone cells and muscle cells differ in structure and function because
A. each expresses a different subset of genes.
B. each has different genes.
C. each has different chromosomes.
D. bone cells secrete bone matrix and muscle cells do not.
E. muscle cells have contractile proteins and bone cells do not.

Difficulty Level: Apply/Analyze
Learning Outcome: 03.06
Topic: Cells

51. Apoptosis is also known as
A. acquired cell death.
B. programmed cell death.
C. mitosis.
D. differentiation.
E. cancer.

Difficulty Level: Remember/Understand
Learning Outcome: 03.07
Topic: Cells

52. During apoptosis
A. chromosomes join.
B. the cytoskeleton forms large, complex structures.
C. mitochondria merge.
D. the cell can no longer adhere to other cells.
E. the cell turns black.

Difficulty Level: Evaluate/Create
Learning Outcome: 03.07
Topic: Cells

53. Lucky people who cannot be infected with HIV are protected because
A. they do not engage in risky behavior.
B. they are already infected.
C. their cells lack receptors that admit the virus
D. they were vaccinated.
E. their cells have extra receptors for HIV.

Boxed Reading: vignette
Difficulty Level: Evaluate/Create
Topic: Cells

54. The cellular abnormality that causes cystic fibrosis is
A. absence of the ability to feel pain.
B. abnormal chloride channels that trap salt inside cells lining the lung passageways.
C. abnormal potassium channels in heart muscle.
D. extra receptors for a growth factor.
E. blood that clots too readily.

Boxed Reading: Clinical Application 3.1
Difficulty Level: Evaluate/Create
Topic: Cells

55. Adrenoleukodystrophy is caused by deficiency of a protein in the outer membrane of
A. cells.
B. lysosomes.
C. mitochondria.
D. nuclei.
E. peroxisomes.

Boxed Reading: Clinical Application 3.2
Difficulty Level: Remember/Understand
Topic: Cells

56. Stem cells taken from a person to be used to treat a disease in that same person come from
A. embryos or fetuses.
B. the person or a blood relative.
C. the body and unaltered or from reprogrammed cells.
D. two different cell types.
E. the brain.

Boxed Reading: From Science to Technology 3.1
Difficulty Level: Apply/Analyze
Topic: Cells

True / False Questions

57. Cytoplasm is located between the cell membrane and the nuclear envelope.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

58. The framework of a cell membrane is a lipid bilayer.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

59. Energy is stored in ATP molecules in ribosomes.
FALSE

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

60. Smooth ER has ribosomes and rough ER does not.
FALSE

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

61. Proteins are manufactured on mitochondria.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

62. Peroxisomes and lysosomes are sacs that contain enzymes.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

63. The Golgi apparatus and ER take part in secretion.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

64. Cilia and flagella extend from certain cells, enabling them to move.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

65. Microfilaments and microtubules are part of the cytoskeleton.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.02
Topic: Cells

66. Chromatin consists of DNA and protein.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

67. A cell that secretes abundant proteins would have many nucleoli.
FALSE

Difficulty Level: Apply/Analyze
Learning Outcome: 03.02
Topic: Cells

68. The nucleus is in the nucleolus.
FALSE

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

69. Diffusion occurs if the cell membrane is permeable to a substance that is more concentrated inside the cell than outside.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.03
Topic: Cells

70. Osmosis is a special case of diffusion.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

71. If a nerve cell has a greater concentration of Na^+ on the inside and K^+ on the outside of the cell membrane, then the movement of Na^+ outside and K^+ inside is by diffusion.
FALSE

Difficulty Level: Apply/Analyze
Learning Outcome: 03.03
Topic: Cells

72. Certain white blood cells take in bacterial cells by phagocytosis.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

73. Facilitated diffusion moves a substance following its concentration gradient, with the aid of a carrier protein.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

74. Filtration requires pressure.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

75. Active transport uses energy stored in ATP molecules.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.03
Topic: Cells

76. Transcytosis combines diffusion and active transport.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.03
Topic: Cells

77. During interphase, a cell rests.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.04
Topic: Cells

78. Stages of the cell cycle in correct sequence are interphase, mitosis, cytoplasmic division, and differentiation.
TRUE

Difficulty Level: Apply/Analyze
Learning Outcome: 03.04
Topic: Cells

79. Cell division consists of mitosis (karyokinesis) and cell differentiation.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.04
Topic: Cells

80. During prophase of mitosis chromosomes align between the centrioles.
FALSE

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

81. During metaphase of mitosis, chromosomes first condense and become visible when stained and viewed under a microscope.
FALSE

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

82. During anaphase of mitosis, centromeres separate and replicated chromosomes separate.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

83. During telophase of mitosis, chromosomes elongate and form chromatin threads.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

84. Abnormal rates of mitosis can lead to poor wounding healing and delayed growth.
TRUE

Difficulty Level: Apply/Analyze
Learning Outcome: 03.05
Topic: Cells

85. All cell types divide at the same rate.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.05
Topic: Cells

86. All cell types can divide a limitless number of times.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.05
Topic: Cells

87. A telomere is a type of hormone that controls the cell cycle.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.05
Topic: Cells

88. Loss of cell cycle control can cause cancer.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.05
Topic: Cells

89. The process by which cells specialize is called differentiation.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.06
Topic: Cells

90. A stem cell divides to give rise to two differentiated cells.
FALSE

Difficulty Level: Remember/Understand
Learning Outcome: 03.06
Topic: Cells

91. Stem cells may be activated after an injury, helping to heal.
TRUE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.06
Topic: Cells

92. A nerve cell and a muscle cell have the same genes, but express different subsets of them.
TRUE

Difficulty Level: Apply/Analyze
Learning Outcome: 03.06
Topic: Cells

93. Apoptosis is a slow version of mitosis.
FALSE

Difficulty Level: Evaluate/Create
Learning Outcome: 03.07
Topic: Cells

94. Apoptosis begins with a cell's receiving a signal to die.
TRUE

Difficulty Level: Remember/Understand
Learning Outcome: 03.07
Topic: Cells

Fill in the Blank Questions

95. The cytoplasm consists of organelles suspended in _____.
cytosol

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

96. The process by which a cell receives and responds to incoming messages is called _____ _____.
signal transduction

Difficulty Level: Remember/Understand
Learning Outcome: 03.02
Topic: Cells

97. Solutions that have a higher osmotic pressure than body fluids are _____.
hypertonic

Difficulty Level: Remember/Understand
Learning Outcome: 03.03
Topic: Cells

98. Mitosis occurs in _____ cells.
somatic

Difficulty Level: Remember/Understand
Learning Outcome: 03.04
Topic: Cells

99. A partly specialized cell that is the daughter of a stem cell is a _____ cell.
progenitor

Difficulty Level: Remember/Understand
Learning Outcome: 03.06
Topic: Cells

100. A cell undergoing _____ loses its shape, forms blebs, and falls apart.
apoptosis

Difficulty Level: Remember/Understand
Learning Outcome: 03.07
Topic: Cells

101. Tay-Sachs disease results from an abnormality that affects the _____ of nerve cells in the brain.
lysosomes

Boxed Reading: Clinical Application 3.2
Difficulty Level: Apply/Analyze
Topic: Cells