Human Anatomy 6th edition Saladin Test Bank

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***Human Anatomy, 6e* (Saladin)**
Chapter 2 Cytology—The Study of Cells

1) The modern cell theory is does *not* state which of the following?
A) The cell is the smallest unit of life.
B) All cells arise from other cells.
C) All cells are enclosed in a cell wall.
D) The cells of all species are fundamentally similar in that they all have DNA as the hereditary material.
E) All functions of the body result from cellular activity.

Answer: C
Section: 2.01
Bloom's: 1. Remember
Learning Outcome: 2.1a State some tenets of the cell theory.
Accessibility: Keyboard Navigation; Screen Reader Compatible

2) The study of *cellular* structure and function is called _____.

Answer: cytology
Section: 2.01
Bloom's: 1. Remember
Learning Outcome: 2.1a State some tenets of the cell theory.
Accessibility: Keyboard Navigation; Screen Reader Compatible

3) Which microscope type would be most useful if a person wanted to see the detailed structure of organelles in a cell?
A) Transmission electron microscope
B) Scanning electron microscope
C) Light microscope
D) Fluorescence microscope
E) Compound microscope

Answer: A
Section: 2.01
Bloom's: 3. Apply
Learning Outcome: 2.1b Discuss how developments in microscopy have changed our view of cell structure.
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4) The transmission electron microscope (TEM) can magnify images up to how many times?
A) 200x
B) 1,200x
C) 300,000x
D) 600,000x
E) 1,000,000x

Answer: D
Section: 2.01
Bloom's: 1. Remember
Learning Outcome: 2.1b Discuss how developments in microscopy have changed our view of cell structure.
Accessibility: Keyboard Navigation; Screen Reader Compatible

5) Which microscope is best suited for determining the texture of a cell's exterior surface?
A) Scanning electron microscope
B) Transmission electron microscope
C) Light microscope
D) Fluorescent microscope

Answer: A
Section: 2.01
Bloom's: 3. Apply
Learning Outcome: 2.1b Discuss how developments in microscopy have changed our view of cell structure.
Accessibility: Keyboard Navigation; Screen Reader Compatible

6) Which of the following is a clear gel, with no visible structure of its own, in which the organelles are embedded?
A) Nucleoplasm
B) Cytoplasm
C) Cytosol
D) Ectoplasm
E) Protoplasm

Answer: C
Section: 2.01
Topic: Intracellular organization
Bloom's: 1. Remember
Learning Outcome: 2.1c Outline the major structural components of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

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7) Select the two major components of the cell.
A) Plasma membrane
B) Cytoplasm
C) Nucleolus
D) DNA

Answer: A, B
Section: 2.01
Topic: Intracellular organization
Bloom's: 1. Remember
Learning Outcome: 2.1c Outline the major structural components of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

8) The fluid outside of a cell is called _____.
A) cytosol
B) intracellular fluid
C) extracellular fluid
D) cytoplasm
E) nucleoplasm

Answer: C
Section: 2.01
Topic: Intracellular organization
Bloom's: 1. Remember
Learning Outcome: 2.1c Outline the major structural components of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

9) Which of the following is *not* one of the major components of a cell?
A) Cytoplasm
B) Nucleus
C) Plasma membrane
D) Interstitial fluid

Answer: D
Section: 2.01
Topic: Intracellular organization
Bloom's: 1. Remember
Learning Outcome: 2.1c Outline the major structural components of a cell.
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10) Digestive juices in the lumen of the intestine move across which surface of the epithelial cells there?
A) Apical surface
B) Basal surface
C) Laminar surface
D) Intracellular surface

Answer: A
Section: 2.01
Bloom's: 3. Apply
Learning Outcome: 2.1c Outline the major structural components of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

11) Mr. Miyata's doctor is concerned that the potassium levels outside of his cells is rising. Which fluid is she monitoring?
A) Extracellular fluid
B) Intercellular fluid
C) Intracellular fluid
D) Extercellular fluid

Answer: A
Section: 2.01
Bloom's: 3. Apply
Learning Outcome: 2.1c Outline the major structural components of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

12) Which term would you use to describe a cell that is thin, flat, and scaly, such as those found on the surface layer (epidermis) of the skin?
A) Columnar
B) Cuboidal
C) Squamous
D) Fusiform
E) Stellate

Answer: C
Section: 2.01
Bloom's: 1. Remember
Learning Outcome: 2.1d Identify cell shapes from their descriptive terms.
Accessibility: Keyboard Navigation; Screen Reader Compatible

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13) Skeletal muscle cells are long, slender, and thread-like. Therefore, they would be considered _____ in shape.
A) squamous
B) discoid
C) fibrous
D) cuboidal

Answer: C
Section: 2.01
Bloom's: 3. Apply
Learning Outcome: 2.1d Identify cell shapes from their descriptive terms.
Accessibility: Keyboard Navigation; Screen Reader Compatible

14) Cells that are thick in the middle and tapered toward the ends are called _____ cells.
A) squamous
B) stellate
C) columnar
D) spheroid
E) fusiform

Answer: E
Section: 2.01
Bloom's: 1. Remember
Learning Outcome: 2.1d Identify cell shapes from their descriptive terms.
Accessibility: Keyboard Navigation; Screen Reader Compatible

15) The flat-shaped cells found covering the skin are _____ in shape.
A) cuboidal
B) columnar
C) cylindrical
D) squamous
E) spherical

Answer: D
Section: 2.01
Bloom's: 1. Remember
Learning Outcome: 2.1d Identify cell shapes from their descriptive terms.
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16) How does the relationship between surface area and volume impact how large a cell can be?
A) Volume is proportional to the cube of the diameter of the cell, so if diameter increases, volume will increase much faster than surface area, limiting exchange of wastes and nutrients.
B) Volume and surface area both increase the same amount if the diameter of the cell increases.
C) Surface area increases proportionately more than volume as the diameter of the cell increases; therefore, exchange of wastes and nutrients is more efficient in a large cell.
D) If the diameter of the cell doubles, the volume of the cell will increase by a factor of four.
E) If the diameter of the cell doubles, the volume of the cell will also double.

Answer: A
Section: 2.01
Bloom's: 3. Apply
Learning Outcome: 2.1e State the size range of human cells and explain why cell size is limited.
Accessibility: Keyboard Navigation; Screen Reader Compatible

17) Which measurement would be most logical to describe the size of a cell?
A) 1–2 mm
B) 10 μm
C) 2 cm
D) 5–10 nm
E) 1 dm

Answer: B
Section: 2.01
Bloom's: 4. Analyze
Learning Outcome: 2.1e State the size range of human cells and explain why cell size is limited.
Accessibility: Keyboard Navigation; Screen Reader Compatible

18) Most human cells range from 10 to 15 micrometers in diameter. What limits how large a cell can get?
A) A cell's lifespan
B) Nutrients available in the environment of a cell
C) The relationship between its volume and length
D) The relationship between its length and surface area
E) The relationship between its volume and surface area

Answer: E
Section: 2.01
Bloom's: 2. Understand
Learning Outcome: 2.1e State the size range of human cells and explain why cell size is limited.
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19) Which of the following explains why block ice lasts longer in a picnic cooler than the same volume of ice cubes?
A) Block ice has the same volume but less surface area than ice cubes so melts more slowly.
B) Block ice has the same surface area but less volume than ice cubes so melts more slowly.
C) Block ice has the same volume but less surface area than ice cubes so melts more quickly.
D) Block ice has the same surface area but less volume than ice cubes so melts more quickly.

Answer: A
Section: 2.01
Bloom's: 5. Evaluate
Learning Outcome: 2.1e State the size range of human cells and explain why cell size is limited.
Accessibility: Keyboard Navigation; Screen Reader Compatible

20) Which of the following is *not* true of phospholipids?
A) They consist of a phosphate-containing head and two fatty acid tails.
B) They comprise the majority of lipids in the plasma membrane.
C) The fatty acid tails are hydrophilic.
D) The phosphate-containing heads are hydrophilic.
E) The heads of the phospholipids face towards the extracellular fluid.

Answer: C
Section: 2.02
Topic: Membrane structure and function
Bloom's: 2. Understand
Learning Outcome: 2.2a Describe the structure of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

21) Which molecules form the basis for the lipid bilayer structure of the plasma membrane?
A) Cholesterol
B) Glycolipids
C) Transmembrane proteins
D) Phospholipids
E) Glycoproteins

Answer: D
Section: 2.02
Topic: Membrane structure and function
Bloom's: 1. Remember
Learning Outcome: 2.2a Describe the structure of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

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22) Most transmembrane proteins have _____ regions facing the intra- and extracellular fluid, and _____ regions embedded in the phospholipid bilayer.
A) hydrophilic; hydrophilic
B) hydrophilic; hydrophobic
C) hydrophobic; hydrophobic
D) hydrophobic; hydrophilic
E) lipophilic; lipophobic

Answer: B
Section: 2.02
Topic: Membrane structure and function
Bloom's: 2. Understand
Learning Outcome: 2.2a Describe the structure of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

23) The term _____ refers to a membrane that allows some things to pass through it but not others.
A) selectively permeable
B) glycocalyx
C) phospholipid bilayer
D) specificity
E) carrier-mediated

Answer: A
Section: 2.02
Topic: Membrane structure and function
Bloom's: 1. Remember
Learning Outcome: 2.2a Describe the structure of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

24) If you need to design a drug to cross the plasma membrane of the blood-brain barrier cells quickly, where would you start?
A) With a lipid-soluble molecule
B) With a water-soluble molecule
C) With a large uncharged molecule
D) With a small charged molecule

Answer: A
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 4. Analyze
Learning Outcome: 2.2a Describe the structure of the plasma membrane.
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25) The genetically unique carbohydrate coat that enables the cell to identify "self " from "non-self " is the _____.
A) cytoskeleton
B) plasma membrane
C) glycocalyx
D) basement membrane
E) serosa

Answer: C
Section: 2.02
Topic: Membrane structure and function; Organelles
Bloom's: 1. Remember
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

26) Which statement concerning transmembrane proteins in the plasma membrane is *false*?
A) They extend all the way through the plasma membrane.
B) Some have carbohydrate chains and help form the glycocalyx.
C) They are more abundant than the phospholipids.
D) They may serve as channels that allow certain solutes to enter and leave the cell.
E) They may be carriers that transport substances from one side of the plasma membrane to the other.

Answer: C
Section: 2.02
Topic: Membrane structure and function
Bloom's: 2. Understand
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

27) What is the function of cholesterol in the plasma membrane?
A) To maintain rigidity of the plasma membrane
B) To make the membrane more resistant to freezing
C) To form receptor molecules
D) To increase the fluidity of the membrane
E) To restrict the entry of most molecules

Answer: D
Section: 2.02
Topic: Membrane structure and function
Bloom's: 1. Remember
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
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28) After phospholipids, what are the next most abundant lipids in the plasma membrane?
A) Triglycerides
B) Glycolipids
C) Saturated fats
D) Cholesterol
E) Steroids

Answer: D
Section: 2.02
Topic: Membrane structure and function
Bloom's: 2. Understand
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

29) The glycocalyx serves all of the following functions *except:*
A) distinguishing the body's own cells from foreign cells.
B) protecting the membrane from physical and chemical injury.
C) determining blood transfusion compatibility.
D) helping to bind a sperm to an egg.
E) absorbing energy into the cell.

Answer: E
Section: 2.02
Topic: Membrane structure and function
Bloom's: 2. Understand
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

30) A defect in which of the following would prevent a cell from attaching to neighboring cells?
A) Cell-adhesion molecules
B) Phospholipids
C) Cholesterol
D) Aquaporins

Answer: A
Section: 2.02
Topic: Membrane structure and function
Bloom's: 3. Apply
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
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31) *Pemphigus vulgaris* is an autoimmune disease in which the body attacks itself resulting in blistering skin. Which of the following are likely the target of this autoimmune attack causing this symptom?
A) Desmosomes between the epithelial cells
B) Tight junctions between the intestinal cells
C) Desmosomes in the cardiac muscle
D) Gap junctions in the cardiac muscle

Answer: A
Section: 2.02
Topic: Membrane structure and function
Bloom's: 4. Analyze
Learning Outcome: 2.2b Explain the functions of the lipid, protein, and carbohydrate components of the plasma membrane.
Accessibility: Keyboard Navigation; Screen Reader Compatible

32) Which process would stop if a person ingested a poison that interfered with ATP production?
A) Simple diffusion
B) Osmosis
C) Filtration
D) Active transport
E) Facilitated diffusion

Answer: D
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 4. Analyze
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

33) White blood cells engulf bacteria by means of _____.
A) phagocytosis
B) pinocytosis
C) active transport
D) facilitated diffusion
E) exocytosis

Answer: A
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 2. Understand
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
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34) How would you characterize the sodium-potassium (Na^+–K^+) pump?
A) Vesicular transport
B) Phagocytosis
C) Active transport
D) Facilitated diffusion
E) Receptor-mediated endocytosis

Answer: C
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 2. Understand
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

35) Specialized pancreatic cells produce insulin. How do you think the cells secrete this product so that it can be used throughout the body?
A) Phagocytosis
B) Pinocytosis
C) Endocytosis
D) Exocytosis
E) Osmosis

Answer: D
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 3. Apply
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

36) Which process is *not* used to move substances out of a cell?
A) Exocytosis
B) Phagocytosis
C) Active transport
D) Simple diffusion
E) Facilitated diffusion

Answer: B
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 2. Understand
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
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37) The endocytotic process by which tiny packets of fluid are brought into the cell is called _____.
A) facilitated diffusion
B) osmosis
C) pinocytosis
D) phagocytosis
E) exocytosis

Answer: C
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 1. Remember
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

38) The process by which particles move from high concentration to low concentration is called _____.

Answer: diffusion
simple diffusion
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 1. Remember
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

39) The process by which a pressure forces material through a membrane is called _____.

Answer: filtration
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 1. Remember
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

40) The diffusion of *water* through a semipermeable membrane is called _____.

Answer: osmosis
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 1. Remember
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
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41) _____ diffusion is a process in which carrier proteins ferry substances down their concentration gradient without the use of cellular energy.

Answer: Facilitated
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 1. Remember
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

42) White blood cells engulf bacteria through the process of _____.

Answer: phagocytosis
endocytosis
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 3. Apply
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

43) Two solutions are separated by a selectively permeable membrane. If solution A has a higher concentration of a nonpermeating solute than solution B, then _____.
A) the solute will pass down its concentration gradient from solution A to B
B) the solute will pass down its concentration gradient from solution B to A
C) water will pass down its concentration gradient from solution A to B
D) water will pass down its concentration gradient from solution B to A
E) neither the solute nor water will diffuse

Answer: D
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 4. Analyze
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
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44) If a genetic mutation affects the production of functional aquaporins, which of the following processes would be most adversely affected?
A) Osmosis
B) Facilitated diffusion
C) Endocytosis
D) Active transport

Answer: A
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 3. Apply
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

45) The sodium-potassium pump transports three sodium ions out for every two potassium ions it brings into a cell. Both ions are moved against their concentration gradients which means it must rely on which molecule in order to function?
A) ATP
B) NADH
C) $C_6H_{12}O_6$
D) H_2O

Answer: A
Section: 2.02
Topic: Mechanisms for movement across cell membranes
Bloom's: 4. Analyze
Learning Outcome: 2.2c Describe the processes for moving material into and out of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

46) Cells of the small intestine and kidney tubule have a "brush border" composed of _____, which are cell extensions that increase surface area.
A) cilia
B) flagella
C) rugae
D) microvilli
E) plicae

Answer: D
Section: 2.02
Topic: Membrane structure and function
Bloom's: 2. Understand
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
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47) Which of the following structures contains an axoneme?
A) Mitochondrion
B) Microvillus
C) Intermediate filament
D) Cilium
E) Desmosome

Answer: D
Section: 2.02
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

48) An individual with widespread blistering of the skin and oral mucosa due to a misguided attack of desmosomes by their own antibodies is likely suffering from which of the following disorders?
A) Diabetes mellitus
B) Multiple sclerosis
C) Situs inversus
D) Pemphigus vulgaris
E) Neoplasm

Answer: D
Section: 2.02
Bloom's: 3. Apply
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

49) Some of the peripheral microtubules of a cilium continue into the cell as a short _____.
A) basal body
B) terminal web
C) microfilament
D) axoneme
E) centrosome

Answer: A
Section: 2.02
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
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50) Which of the following is *true* of tight junctions?
A) They are formed by connexons.
B) They seal off intercellular space and prevent substances from passing between cells.
C) They contain channels of diffusion of solutes from one cell to the next.
D) They are patches that are formed when J-shaped proteins protrude toward the plasma membrane from the cytoskeleton.
E) They are patch-like connections that are abundant in the epidermis and serve to keep cells from pulling apart.

Answer: B
Section: 2.02
Bloom's: 2. Understand
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

51) Which type of intercellular connection facilitates the passage of electrical signals between cardiocytes and enables a coordinated heart beat?
A) Tight junctions
B) Desmosomes
C) Gap junctions
D) Tuxedo junctions
E) J junctions

Answer: C
Section: 2.02
Bloom's: 1. Remember
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

52) Extensions of the plasma membrane that increase surface area for the absorption of nutrients in the small intestine are called _____.

Answer: microvilli
brush border
Section: 2.02
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
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53) Ciliated cells lining the trachea are killed with continued exposure to cigarette smoke. Therefore, in a smoker, which of the following functions are impaired?
A) The ability of these cells to move mucus over the tracheal surface.
B) The ability of these cells to produce mucus.
C) The ability of these cells to transport oxygen.
D) The ability of these cells to remove carbon dioxide.

Answer: A
Section: 2.02
Topic: Organelles
Bloom's: 4. Analyze
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

54) In Kartagener syndrome, the protein dynein is not produced. Which of the following would result?
A) A male would be infertile due to non-motile sperm.
B) Ribosomes would be unable to produce functional proteins.
C) Mitochondria could no longer produce ATP.
D) Cell plasma membranes would become rigid, tear, and leak calcium into the surrounding tissues.

Answer: A
Section: 2.02
Topic: Organelles
Bloom's: 3. Apply
Learning Outcome: 2.2d Describe the structure and function of microvilli, cilia, flagella, and cell junctions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

55) What are cytoskeletal microfilaments composed of?
A) Keratin
B) Cholesterol
C) Actin
D) Glycoproteins
E) Phospholipids

Answer: C
Section: 2.03
Topic: Intracellular organization
Bloom's: 1. Remember
Learning Outcome: 2.3a Describe the cytoskeleton and its functions.
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56) Which of the following is *not* a component of the cytoskeleton?
A) Microfilaments
B) Microtubules
C) Actin
D) Intermediate filaments
E) Cilia

Answer: E
Section: 2.03
Topic: Intracellular organization
Bloom's: 2. Understand
Learning Outcome: 2.3a Describe the cytoskeleton and its functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

57) Which of the following would *not* be affected by the absence of microtubules?
A) Cell division
B) Cell movement
C) The arrangement of organelles
D) DNA replication
E) Movement of molecules within the cell

Answer: D
Section: 2.03
Topic: Intracellular organization; Organelles
Bloom's: 3. Apply
Learning Outcome: 2.3a Describe the cytoskeleton and its functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

58) The cytoskeleton component composed mainly of the protein actin is a _____.

Answer: microfilament
Section: 2.03
Topic: Intracellular organization
Bloom's: 1. Remember
Learning Outcome: 2.3a Describe the cytoskeleton and its functions.
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59) Which of the following gives a cell structural support, determines its shape, and moves substances within it?
A) Cholesterol
B) The nucleus
C) The plasma membrane
D) The Golgi complex
E) The cytoskeleton

Answer: E
Section: 2.03
Topic: Intracellular organization
Bloom's: 2. Understand
Learning Outcome: 2.3a Describe the cytoskeleton and its functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

60) Which organelle is enclosed with two membranes and has cristae extending inward from the inner membrane?
A) Endoplasmic reticulum
B) Nucleus
C) Lysosome
D) Golgi complex
E) Mitochondrion

Answer: E
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

61) Materials that are to be discharged from a cell via exocytosis are packaged by which organelle?
A) Lysosome
B) Endoplasmic reticulum
C) Mitochondrion
D) Ribosome
E) Golgi complex

Answer: E
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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62) Where in the cell are amino acids assembled into proteins?
A) Endoplasmic reticulum
B) Ribosome
C) Nucleus
D) Golgi complex
E) Mitochondrion

Answer: B
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

63) Which of the following cells has a flagellum?
A) A cell lining the respiratory tract
B) A spermatozoon
C) A cell specialized for absorption, such as an epithelial cell of the small intestine
D) A cell lining the uterine tube
E) A neuron

Answer: B
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

64) The rough endoplasmic reticulum performs which of the following functions?
A) ATP synthesis
B) Protein synthesis
C) DNA synthesis
D) Active transport
E) Polysaccharide hydrolysis

Answer: B
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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65) Which organelle is most active in apoptosis (programmed cell death)?
A) Mitochondrion
B) Endoplasmic reticulum
C) Lysosome
D) Nucleus

Answer: C
Section: 2.03
Topic: Organelles
Bloom's: 3. Apply
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

66) Muscle cells contain numerous _____ because of their high demand for ATP.
A) mitochondria
B) endoplasmic reticula
C) lysosomes
D) nuclei
E) Golgi complexes

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 3. Apply
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

67) Why is the nucleus considered to be the control center of cellular activity?
A) It contains DNA.
B) It has nuclear pores.
C) It contains ribosomes.
D) It has a nuclear envelope.
E) It has a nucleolus.

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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68) Where do lysosomes originate?
A) Golgi complex
B) Plasma membrane
C) Nucleus
D) Phospholipids
E) Smooth endoplasmic reticulum

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

69) Which organelle has its own DNA independent of nuclear DNA?
A) Golgi complex
B) Lysosome
C) Ribosome
D) Peroxisome
E) Mitochondrion

Answer: E
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

70) Which of the following is *not* a function of the Golgi complex?
A) Synthesis of carbohydrates
B) Synthesis of lysosomes
C) Packaging of proteins for export from the cell
D) DNA replication
E) Addition of carbohydrates to certain proteins

Answer: D
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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71) What is the function of peroxisomes?
A) To produce ATP
B) To package vesicles
C) To break down proteins and phospholipids
D) To detoxify various drugs in the liver
E) To synthesize lipids

Answer: D
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

72) Where in the body would you expect to find cells that have an abundance of smooth endoplasmic reticulum?
A) The ovaries
B) The brain
C) The lining of the stomach
D) The surface of the skin
E) The bone marrow

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 4. Analyze
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

73) Which function would stop immediately if the ribosomes of a cell were destroyed?
A) ATP synthesis
B) DNA replication
C) Protein synthesis
D) Osmosis
E) Active transport

Answer: C
Section: 2.03
Topic: Organelles
Bloom's: 4. Analyze
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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74) The organelle that synthesizes carbohydrates, sorts and packages proteins, and synthesizes lysosomes is the _____.

Answer: Golgi complex
Golgi apparatus
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

75) Most ATP production occurs in the _____ (organelle) of the cell.

Answer: mitochondria
mitochondrion
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

76) The _____ endoplasmic reticulum is studded with ribosomes and plays a role in protein synthesis.

Answer: rough
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

77) An organelle that synthesizes steroid hormones and is abundant in the ovaries and testes is the _____ endoplasmic reticulum.

Answer: smooth
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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78) Membrane-enclosed packets of enzymes that play a role in apoptosis are called _____.

Answer: lysosomes
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

79) The _____ (organelle) plays a role in neutralizing free radicals, detoxifying alcohol and other drugs, and breaking fatty acids into 2-carbon molecules.

Answer: peroxisome
Section: 2.03
Topic: Organelles
Bloom's: 1. Remember
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

80) Amino acid chains are assembled into proteins in _____ (organelles).

Answer: ribosomes
ribosome
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

81) An organelle that contains its own DNA, independent of the nuclear DNA, is the _____.

Answer: mitochondrion
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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82) The fuzzy coat of carbohydrates on the outer surface of the plasma membrane that functions in cell identification is called the _____.
A) brush border
B) glycocalyx
C) cholesterol coat
D) phospholipid bilayer
E) cell-adhesion molecule

Answer: B
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

83) Which of the following is *not* a membranous organelle?
A) Mitochondria
B) Ribosome
C) Nucleus
D) Endoplasmic reticulum
E) Golgi complex

Answer: B
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

84) _____ play an important role in cell division, and they are made of _____.
A) Mitochondria; microtubules
B) Ribosomes; intermediate filaments
C) Nucleoli; microfilaments
D) Centrioles; microtubules
E) Inclusions; centrosomes

Answer: D
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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85) Which of the following organelles is *not* involved in protein synthesis?
A) Smooth ER
B) Rough ER
C) The Golgi complex
D) The nucleus
E) Ribosomes

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 4. Analyze
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

86) The male testes are responsible for producing the steroid hormones called androgens. Which organelle do these cells likely have an abundance of?
A) Smooth endoplasmic reticulum
B) Rough endoplasmic reticulum
C) Proteasomes
D) Mitochondria

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 3. Apply
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

87) The liver is responsible for detoxifying the blood. One can thus surmise that liver cells, hepatocytes, likely have an abundance of which of the following?
A) Peroxisomes
B) Lysosomes
C) Ribosomes
D) Mitochondria

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 3. Apply
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
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88) In Kearns–Sayre syndrome, tissues that rely on aerobic respiration are most heavily affected. Defects in which organelles do you think cause this disease?
A) Mitochondria
B) Nucleoli
C) Peroxisomes
D) Ribosomes

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 3. Apply
Learning Outcome: 2.3b List the main organelles of a cell and explain their functions.
Accessibility: Keyboard Navigation; Screen Reader Compatible

89) Which of the following is found within a cytoplasmic inclusion?
A) Golgi complex
B) Lysosome
C) Microtubule
D) Glycogen
E) Mitochondrion

Answer: D
Section: 2.03
Topic: Intracellular organization
Bloom's: 2. Understand
Learning Outcome: 2.3c Give some examples of cell inclusions and explain how inclusions differ from organelles.
Accessibility: Keyboard Navigation; Screen Reader Compatible

90) Which of the following is *true* of inclusions?
A) They are enclosed in a unit membrane.
B) They are essential for cell survival.
C) An example of an inclusion is a mitochondrion.
D) They are never enclosed in a unit membrane.
E) They are one component of the cytoskeleton.

Answer: D
Section: 2.03
Topic: Intracellular organization
Bloom's: 2. Understand
Learning Outcome: 2.3c Give some examples of cell inclusions and explain how inclusions differ from organelles.
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91) Which of the following is *not* considered an inclusion?
A) Lysosome
B) Fat droplet
C) Glycogen granule
D) Bacterium
E) Dust particle

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 2. Understand
Learning Outcome: 2.3c Give some examples of cell inclusions and explain how inclusions differ from organelles.
Accessibility: Keyboard Navigation; Screen Reader Compatible

92) Why does the antibiotic streptomycin also affect a human's mitochondria?
A) Mitochondrial DNA is similar to bacterial DNA.
B) Mitochondria have a double membrane similar to the nucleus.
C) Streptomycin targets mitochondrial cristae.
D) Mitochondrial enzymes are only found in bacteria.

Answer: A
Section: 2.03
Topic: Organelles
Bloom's: 5. Evaluate
Learning Outcome: 2.3c Give some examples of cell inclusions and explain how inclusions differ from organelles.
Accessibility: Keyboard Navigation; Screen Reader Compatible

93) In which phase of the cell cycle is DNA replicated?
A) G_1
B) G_2
C) S
D) Anaphase
E) Telophase

Answer: C
Section: 2.04
Topic: Somatic cell division
Bloom's: 1. Remember
Learning Outcome: 2.4a Describe the life cycle of a cell.
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94) Separation of the cytoplasm during cell division is called _____.
A) telophase
B) anaphase
C) metaphase
D) cytokinesis
E) mitosis

Answer: D
Section: 2.04
Topic: Somatic cell division
Bloom's: 1. Remember
Learning Outcome: 2.4a Describe the life cycle of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

95) A mass of tissue produced when the rate of cell division exceeds the rate of cell death is known as a _____.

Answer: tumor
neoplasm
Section: 2.04
Topic: Somatic cell division
Bloom's: 2. Understand
Learning Outcome: 2.4a Describe the life cycle of a cell.
Accessibility: Keyboard Navigation; Screen Reader Compatible

96) If a cell is unable to synthesize nucleotides, which phase of the cell cycle would be most adversely affected?
A) S phase
B) G_1 phase
C) G2 phase
D) M phase

Answer: A
Section: 2.04
Topic: DNA replication and the cell cycle
Bloom's: 3. Apply
Learning Outcome: 2.4a Describe the life cycle of a cell.
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97) During mitosis, what is the function of the mitotic spindle?
A) It separates the chromatids at the centromere.
B) It pulls together the replicated chromosomal strands.
C) It re-forms the nuclear envelope.
D) It separates the cytoplasm to the new daughter cells.
E) It separates the two halves of the DNA double helix.

Answer: A
Section: 2.04
Topic: Somatic cell division
Bloom's: 1. Remember
Learning Outcome: 2.4b Name the stages of mitosis and describe the events that occur in each one.
Accessibility: Keyboard Navigation; Screen Reader Compatible

98) In mitosis, which structure anchors the spindle fibers to the chromosome?
A) Centromere
B) Kinetochore
C) Chromatid
D) Aster
E) Mitotic spindle

Answer: B
Section: 2.04
Topic: Somatic cell division
Bloom's: 2. Understand
Learning Outcome: 2.4b Name the stages of mitosis and describe the events that occur in each one.
Accessibility: Keyboard Navigation; Screen Reader Compatible

99) The phase of the cell cycle in which proteins are synthesized, growth occurs, and regular cellular tasks are carried out is the _____ phase.

Answer: G1
first gap
Section: 2.04
Topic: Somatic cell division
Bloom's: 1. Remember
Learning Outcome: 2.4b Name the stages of mitosis and describe the events that occur in each one.
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100) During _____ (a stage) of the cell cycle, the chromatids are pulled to opposite sides of the cell.

Answer: anaphase
Section: 2.04
Topic: Somatic cell division
Bloom's: 2. Understand
Learning Outcome: 2.4b Name the stages of mitosis and describe the events that occur in each one.
Accessibility: Keyboard Navigation; Screen Reader Compatible

101) An interruption during which stage of mitosis could result in two daughter cells with an unequal number of chromosomes?
A) Anaphase
B) Metaphase
C) Prophase
D) Telophase

Answer: A
Section: 2.04
Topic: DNA replication and the cell cycle
Bloom's: 3. Apply
Learning Outcome: 2.4b Name the stages of mitosis and describe the events that occur in each one.
Accessibility: Keyboard Navigation; Screen Reader Compatible

102) What are pluripotent stem cells?
A) Cells that are able to develop only into one mature cell type.
B) Cells found only in the bone marrow that can differentiate into any kind of blood cell.
C) Cells found only in adult tissue that replace cells that have died or become damaged.
D) Cells from pre-embryos that can develop into any type of embryonic or adult cell.
E) Very strong cells that can assume the function of any cell type in the body.

Answer: D
Section: 2.04
Bloom's: 1. Remember
Learning Outcome: 2.4c Discuss the types and clinical uses of stem cells.
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103) Embryonic stem cells are said to be _____. That is, they have the ability to develop into any type of adult cell.

Answer: pluripotent
Section: 2.04
Topic: Somatic cell division
Bloom's: 1. Remember
Learning Outcome: 2.4c Discuss the types and clinical uses of stem cells.
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