

AP Biology-Chapter #6 & 7 Review**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

1. All of the following are part of a prokaryotic cell *except*
 - a. DNA.
 - b. a cell wall.
 - c. a plasma membrane.
 - d. ribosomes.
 - e. an endoplasmic reticulum.
2. The volume enclosed by the plasma membrane of plant cells is often much larger than the corresponding volume in animal cells. The most reasonable explanation for this observation is that
 - a. plant cells are capable of having a much higher surface-to-volume ratio than animal cells.
 - b. plant cells have a much more highly convoluted (folded) plasma membrane than animal cells.
 - c. plant cells contain a large vacuole that reduces the volume of the cytoplasm.
 - d. animal cells are more spherical, while plant cells are elongated.
 - e. the basic functions of plant cells are very different from those of animal cells.
3. Which of the following is a major cause of the size limits for certain types of cells?
 - a. the evolution of larger cells after the evolution of smaller cells
 - b. the difference in plasma membranes between prokaryotes and eukaryotes
 - c. the evolution of eukaryotes after the evolution of prokaryotes
 - d. the need for a surface area of sufficient area to allow the cell's function
 - e. the observation that longer cells usually have greater cell volume
4. Large numbers of ribosomes are present in cells that specialize in producing which of the following molecules?
 - a. lipids
 - b. starches
 - c. proteins
 - d. steroids
 - e. glucose
5. The nuclear lamina is an array of filaments on the inner side of the nuclear membrane. If a method were found that could cause the lamina to fall into disarray, what would you expect to be the most likely consequence?
 - a. the loss of all nuclear function
 - b. the inability of the cell to withstand enzymatic digestion
 - c. a change in the shape of the nucleus
 - d. failure of chromosomes to carry genetic information
 - e. inability of the nucleus to keep out destructive chemicals
6. Under which of the following conditions would you expect to find a cell with a predominance of free ribosomes?
 - a. a cell that is secreting proteins
 - b. a cell that is producing cytoplasmic enzymes
 - c. a cell that is constructing its cell wall or extracellular matrix
 - d. a cell that is digesting food particles
 - e. a cell that is enlarging its vacuole

7. Which type of organelle is primarily involved in the synthesis of oils, phospholipids, and steroids?
 - a. ribosome
 - b. lysosome
 - c. smooth endoplasmic reticulum
 - d. mitochondrion
 - e. contractile vacuole
8. Which structure is the site of the synthesis of proteins that may be exported from the cell?
 - a. rough ER
 - b. lysosomes
 - c. plasmodesmata
 - d. Golgi vesicles
 - e. tight junctions
9. The Golgi apparatus has a polarity or sidedness to its structure and function. Which of the following statements *correctly* describes this polarity?
 - a. Transport vesicles fuse with one side of the Golgi and leave from the opposite side.
 - b. Proteins in the membrane of the Golgi may be sorted and modified as they move from one side of the Golgi to the other.
 - c. Lipids in the membrane of the Golgi may be sorted and modified as they move from one side of the Golgi to the other.
 - d. Soluble proteins in the cisternae (interior) of the Golgi may be sorted and modified as they move from one side of the Golgi to the other.
 - e. All of the above correctly describe polar characteristics of the Golgi function.
10. The fact that the outer membrane of the nuclear envelope has bound ribosomes allows one to *most reliably* conclude that
 - a. at least some of the proteins that function in the nuclear envelope are made by the ribosomes on the nuclear envelope.
 - b. the nuclear envelope is not part of the endomembrane system.
 - c. the nuclear envelope is physically continuous with the endoplasmic reticulum.
 - d. small vesicles from the Golgi fuse with the nuclear envelope.
 - e. nuclear pore complexes contain proteins.
11. In animal cells, hydrolytic enzymes are packaged to prevent general destruction of cellular components. Which of the following organelles functions in this compartmentalization?
 - a. chloroplast
 - b. lysosome
 - c. central vacuole
 - d. peroxisome
 - e. glyoxysome

12. Which of the following statements *correctly* describes some aspect of protein disposal from prokaryotic cells?
- Prokaryotes are unlikely to be able to excrete proteins because they lack an endomembrane system.
 - The mechanism of protein excretion in prokaryotes is probably the same as that in eukaryotes.
 - Proteins that are excreted by prokaryotes are synthesized on ribosomes that are bound to the cytoplasmic surface of the plasma membrane.
 - In prokaryotes, the ribosomes that are used for the synthesis of secreted proteins are located outside of the cell.
 - Prokaryotes contain large pores in their plasma membrane that permit the movement of proteins out of the cell.
13. Tay-Sachs disease is a human genetic abnormality that results in cells accumulating and becoming clogged with very large and complex lipids. Which cellular organelle must be involved in this condition?
- the endoplasmic reticulum
 - the Golgi apparatus
 - the lysosome
 - mitochondria
 - membrane-bound ribosomes
14. The liver is involved in detoxification of many poisons and drugs. Which of the following structures is primarily involved in this process and therefore abundant in liver cells?
- rough ER
 - smooth ER
 - Golgi apparatus
 - Nuclear envelope
 - Transport vesicles
15. Which of the following produces and modifies polysaccharides that will be secreted?
- lysosome
 - vacuole
 - mitochondrion
 - Golgi apparatus
 - peroxisome
16. Which of the following contains hydrolytic enzymes?
- lysosome
 - vacuole
 - mitochondrion
 - Golgi apparatus
 - peroxisome
17. Which of the following is a compartment that often takes up much of the volume of a plant cell?
- lysosome
 - vacuole
 - mitochondrion
 - Golgi apparatus
 - peroxisome
18. Which is one of the main energy transformers of cells?
- lysosome
 - vacuole
 - mitochondrion
 - Golgi apparatus
 - peroxisome
19. Which of the following contains its own DNA and ribosomes?
- lysosome
 - vacuole
 - mitochondrion
 - Golgi apparatus
 - peroxisome

20. Which of the following contains enzymes that transfer hydrogen from various substrates to oxygen?
- lysosome
 - vacuole
 - mitochondrion
 - Golgi apparatus
 - peroxisome
21. Grana, thylakoids, and stroma are all components found in
- vacuoles.
 - chloroplasts.
 - mitochondria.
 - lysosomes.
 - nuclei.
22. Organelles other than the nucleus that contain DNA include
- ribosomes.
 - mitochondria.
 - chloroplasts.
 - B and C only
 - A, B, and C
23. A biologist ground up some plant leaf cells and then centrifuged the mixture to fractionate the organelles. Organelles in one of the heavier fractions could produce ATP in the light, while organelles in the lighter fraction could produce ATP in the dark. The heavier and lighter fractions are most likely to contain, respectively,
- mitochondria and chloroplasts.
 - chloroplasts and peroxisomes.
 - peroxisomes and chloroplasts.
 - chloroplasts and mitochondria.
 - mitochondria and peroxisomes.
24. Which of the following are capable of converting light energy to chemical energy?
- chloroplasts
 - mitochondria
 - leucoplasts
 - peroxisomes
 - Golgi bodies
25. A cell has the following molecules and structures: enzymes, DNA, ribosomes, plasma membrane, and mitochondria. It could be a cell from
- a bacterium.
 - an animal, but not a plant.
 - a plant, but not an animal.
 - a plant or an animal.
 - any kind of organism.
26. The peroxisome gets its name from its interaction with hydrogen peroxide. If a liver cell is detoxifying alcohol and some other poisons, it does so by removal of hydrogen from the molecules. What, then, do the enzymes of the peroxisome do?
- combine the hydrogen with ATP
 - use the hydrogen to break down hydrogen peroxide
 - transfer the harmful substances to the mitochondria
 - transfer the hydrogens to oxygen molecules
27. Cells can be described as having a cytoskeleton of internal structures that contribute to the shape, organization, and movement of the cell. Which of the following are part of the cytoskeleton?
- the nuclear envelope
 - mitochondria
 - microfilaments
 - lysosomes
 - nucleoli
28. Which of the following contain the 9 + 2 arrangement of microtubules?
- cilia
 - centrioles
 - flagella
 - A and C only
 - A, B, and C

29. When a potassium ion (K^+) moves from the soil into the vacuole of a cell on the surface of a root, it must pass through several cellular structures. Which of the following correctly describes the order in which these structures will be encountered by the ion?
- plasma membrane → primary cell wall → cytoplasm → tonoplast
 - secondary cell wall → plasma membrane → primary cell wall → cytoplasm → tonoplast
 - primary cell wall → plasma membrane → cytoplasm → tonoplast
 - primary cell wall → plasma membrane → tonoplast → cytoplasm → vacuole
 - tonoplast → primary cell wall → plasma membrane → cytoplasm
30. The extracellular matrix is thought to participate in the regulation of animal cell behavior by communicating information from the outside to the inside of the cell via which of the following?
- gap junctions
 - the nucleus
 - DNA and RNA
 - integrins
 - plasmodesmata
31. Plasmodesmata in plant cells are *most* similar in function to which of the following structures in animal cells?
- peroxisomes
 - desmosomes
 - gap junctions
 - extracellular matrix
 - tight junctions
32. Ions can travel directly from the cytoplasm of one animal cell to the cytoplasm of an adjacent cell through
- plasmodesmata.
 - intermediate filaments.
 - tight junctions.
 - desmosomes.
 - gap junctions.
33. Which statement *correctly* characterizes bound ribosomes?
- Bound ribosomes are enclosed in their own membrane.
 - Bound and free ribosomes are structurally different.
 - Bound ribosomes generally synthesize membrane proteins and secretory proteins.
 - The most common location for bound ribosomes is the cytoplasmic surface of the plasma membrane.
 - All of the above.
34. Which structure is *not* part of the endomembrane system?
- nuclear envelope
 - chloroplast
 - Golgi apparatus
 - plasma membrane
 - ER
35. Cells of the pancreas will incorporate radioactively labeled amino acids into proteins. This "tagging" of newly synthesized proteins enables a researcher to track their location. In this case, we are tracking an enzyme secreted by pancreatic cells. What is its most likely pathway?
- ER → Golgi → nucleus
 - Golgi → ER → lysosome
 - nucleus → ER → Golgi
 - ER → Golgi → vesicles that fuse with plasma membrane
 - ER → lysosomes → vesicles that fuse with plasma membrane

36. Which structure is common to plant *and* animal cells?
- chloroplast
 - wall made of cellulose
 - central vacuole
 - mitochondrion
 - centriole
37. Which of the following is present in a prokaryotic cell?
- mitochondrion
 - ribosome
 - nuclear envelope
 - chloroplast
 - ER
38. Which cell would be best for studying lysosomes?
- muscle cell
 - nerve cell
 - phagocytic white blood cell
 - leaf cell of a plant
 - bacterial cell
39. Cyanide binds with at least one molecule involved in producing ATP. If a cell is exposed to cyanide, most of the cyanide would be found within the
- mitochondria.
 - ribosomes.
 - peroxisomes.
 - lysosomes.
 - endoplasmic reticulum.
40. The presence of cholesterol in the plasma membranes of some animals
- enables the membrane to stay fluid more easily when cell temperature drops.
 - enables the animal to remove hydrogen atoms from saturated phospholipids.
 - enables the animal to add hydrogen atoms to unsaturated phospholipids.
 - makes the membrane less flexible, allowing it to sustain greater pressure from within the cell.
 - makes the animal more susceptible to circulatory disorders.
41. According to the fluid mosaic model of cell membranes, which of the following is a *true* statement about membrane phospholipids?
- They can move laterally along the plane of the membrane.
 - They frequently flip-flop from one side of the membrane to the other.
 - They occur in an uninterrupted bilayer, with membrane proteins restricted to the surface of the membrane.
 - They are free to depart from the membrane and dissolve in the surrounding solution.
 - They have hydrophilic tails in the interior of the membrane.
42. Which of the following is one of the ways that the membranes of winter wheat are able to remain fluid when it is extremely cold?
- by increasing the percentage of unsaturated phospholipids in the membrane
 - by increasing the percentage of cholesterol molecules in the membrane
 - by decreasing the number of hydrophobic proteins in the membrane
 - by co-transport of glucose and hydrogen
 - by using active transport

43. In order for a protein to be an integral membrane protein it would have to be which of the following?
- hydrophilic
 - hydrophobic
 - amphipathic
 - completely covered with phospholipids
 - exposed on only one surface of the membrane
44. Which of the following is a reasonable explanation for why unsaturated fatty acids help keep any membrane more fluid at lower temperatures?
- The double bonds form kinks in the fatty acid tails, forcing adjacent lipids to be further apart.
 - Unsaturated fatty acids have a higher cholesterol content and therefore more cholesterol in membranes.
 - Unsaturated fatty acids permit more water in the interior of the membrane.
 - The double bonds block interaction among the hydrophilic head groups of the lipids.
 - The double bonds result in shorter fatty acid tails and thinner membranes.
45. Why are lipids and proteins free to move laterally in membranes?
- The interior of the membrane is filled with liquid water.
 - There are no covalent bonds between lipid and protein in the membrane.
 - Hydrophilic portions of the lipids are in the interior of the membrane.
 - There are only weak hydrophobic interactions in the interior of the membrane.
 - Molecules such as cellulose can pull them in various directions.
46. What kinds of molecules pass through a cell membrane most easily?
- large and hydrophobic
 - small and hydrophobic
 - large polar
 - ionic
 - monosaccharides such as glucose
47. Which of the following is a characteristic feature of a carrier protein in a plasma membrane?
- It is a peripheral membrane protein.
 - It exhibits a specificity for a particular type of molecule.
 - It requires the expenditure of cellular energy to function.
 - It works against diffusion.
 - It has few, if any, hydrophobic amino acids.
48. After a membrane freezes and then thaws, it often becomes leaky to solutes. The most reasonable explanation for this is that
- transport proteins become nonfunctional during freezing.
 - the lipid bilayer loses its fluidity when it freezes.
 - aquaporins can no longer function after freezing.
 - the integrity of the lipid bilayer is broken when the membrane freezes.
 - the solubility of most solutes in the cytoplasm decreases on freezing.
49. Which of the following would likely move through the lipid bilayer of a plasma membrane most rapidly?
- CO₂
 - an amino acid
 - glucose
 - K⁺
 - starch

50. Which of the following statements is *correct* about diffusion?
- It is very rapid over long distances.
 - It requires an expenditure of energy by the cell.
 - It is a passive process in which molecules move from a region of higher concentration to a region of lower concentration.
 - It is an active process in which molecules move from a region of lower concentration to one of higher concentration.
 - It requires integral proteins in the cell membrane.
51. Water passes quickly through cell membranes because
- the bilayer is hydrophilic.
 - it moves through hydrophobic channels.
 - water movement is tied to ATP hydrolysis.
 - it is a small, polar, charged molecule.
 - it moves through aquaporins in the membrane.

The following information should be used to answer the following questions.

Cystic fibrosis is a genetic disease in humans in which chloride ion channels in cell membranes are missing or nonfunctional.

52. Chloride ion channels are membrane structures that include which of the following?
- gap junctions
 - aquaporins
 - hydrophilic proteins
 - carbohydrates
 - sodium ions

53. Which of the following would you expect to be a problem for someone with nonfunctional chloride channeling?
- inadequate secretion of mucus
 - buildup of excessive secretions in organs such as lungs
 - buildup of excessive secretions in glands such as the pancreas
 - sweat that includes no NaCl
 - mental retardation due to low salt levels in brain tissue

Use the diagram of the U-tube in Figure 7.2 to answer the questions that follow.

The solutions in the two arms of this U-tube are separated by a membrane that is permeable to water and glucose but not to sucrose. Side A is half filled with a solution of 2 M sucrose and 1 M glucose. Side B is half filled with 1 M sucrose and 2 M glucose. Initially, the liquid levels on both sides are equal.

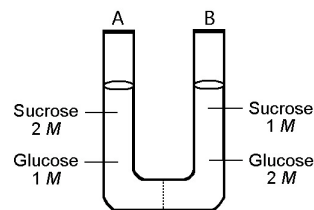


Figure 7.2

54. Initially, in terms of tonicity, the solution in side A with respect to that in side B is
- hypotonic.
 - plasmolyzed.
 - isotonic.
 - saturated.
 - hypertonic.

55. After the system reaches equilibrium, what changes are observed?
- The molarity of sucrose and glucose are equal on both sides.
 - The molarity of glucose is higher in side A than in side B.
 - The water level is higher in side A than in side B.
 - The water level is unchanged.
 - The water level is higher in side B than in side A.
56. A patient has had a serious accident and lost a lot of blood. In an attempt to replenish body fluids, distilled water, equal to the volume of blood lost, is transferred directly into one of his veins. What will be the most probable result of this transfusion?
- It will have no unfavorable effect as long as the water is free of viruses and bacteria.
 - The patient's red blood cells will shrivel up because the blood fluid is hypotonic compared to the cells.
 - The patient's red blood cells will swell because the blood fluid is hypotonic compared to the cells.
 - The patient's red blood cells will shrivel up because the blood fluid is hypertonic compared to the cells.
 - The patient's red blood cells will burst because the blood fluid is hypertonic compared to the cells.
57. Celery stalks that are immersed in fresh water for several hours become stiff and hard. Similar stalks left in a salt solution become limp and soft. From this we can deduce that the cells of the celery stalks are
- hypotonic to both fresh water and the salt solution.
 - hypertonic to both fresh water and the salt solution.
 - hypertonic to fresh water but hypotonic to the salt solution.
 - hypotonic to fresh water but hypertonic to the salt solution.
 - isotonic with fresh water but hypotonic to the salt solution.
58. A cell whose cytoplasm has a concentration of 0.02 molar glucose is placed in a test tube of water containing 0.02 molar glucose. Assuming that glucose is not actively transported into the cell, which of the following terms describes the tonicity of the external solution relative to the cytoplasm of the cell?
- turgid
 - hypertonic
 - hypotonic
 - flaccid
 - isotonic

Refer to Figure 7.3 to answer the following questions.

The solutions in the arms of a U-tube are separated at the bottom of the tube by a selectively permeable membrane. The membrane is permeable to sodium chloride but not to glucose. Side A is filled with a solution of 0.4 M glucose and 0.5 M sodium chloride (NaCl), and side B is filled with a solution containing 0.8 M glucose and 0.4 M sodium chloride. Initially, the volume in both arms is the same.

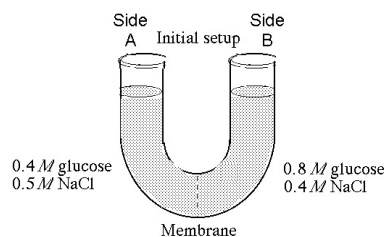


Figure 7.3

59. At the beginning of the experiment,
- side A is hypertonic to side B.
 - side A is hypotonic to side B.
 - side A is isotonic to side B.
 - side A is hypertonic to side B with respect to glucose.
 - side A is hypotonic to side B with respect to sodium chloride.
60. If you examine side A after 3 days, you should find
- a decrease in the concentration of NaCl and glucose and an increase in the water level.
 - a decrease in the concentration of NaCl, an increase in water level, and no change in the concentration of glucose.
 - no net change in the system.
 - a decrease in the concentration of NaCl and a decrease in the water level.
 - no change in the concentration of NaCl and glucose and an increase in the water level.
61. Which of the following statements *correctly* describes the normal tonicity conditions for typical plant and animal cells?
- The animal cell is in a hypotonic solution, and the plant cell is in an isotonic solution.
 - The animal cell is in an isotonic solution, and the plant cell is in a hypertonic solution.
 - The animal cell is in a hypertonic solution, and the plant cell is in an isotonic solution.
 - The animal cell is in an isotonic solution, and the plant cell is in a hypotonic solution.
 - The animal cell is in a hypertonic solution, and the plant cell is in a hypotonic solution.

62. You are working on a team that is designing a new drug. In order for this drug to work, it must enter the cytoplasm of specific target cells. Which of the following would be a factor that determines whether the molecule enters the cell?
- blood or tissue type of the patient
 - non-polarity of the drug molecule
 - lack of charge on the drug molecule
 - similarity of the drug molecule to other molecules transported by the target cells
 - lipid composition of the target cells' plasma membrane
63. In which of the following would there be the greatest need for osmoregulation?
- an animal connective tissue cell bathed in isotonic body fluid
 - a terrestrial animal such as a snake
 - a red blood cell surrounded by plasma
 - a lymphocyte before it has been taken back into lymph fluid
 - a plant being grown hydroponically (in a watery mixture of designated nutrients)
64. When a plant cell, such as one from a peony stem, is submerged in a very hypotonic solution, what is likely to occur?
- the cell will burst
 - the cell membrane will lyse
 - plasmolysis will shrink the interior
 - the cell will become flaccid
 - the cell will become turgid
65. Which of the following membrane activities require energy from ATP hydrolysis?
- facilitated diffusion.
 - movement of water into a cell
 - Na^+ ions moving out of the cell
 - movement of glucose molecules
 - movement of water into a paramecium
66. What is the voltage across a membrane called?
- water potential
 - chemical gradient
 - membrane potential
 - osmotic potential
 - electrochemical gradient
67. The sodium-potassium pump is called an electrogenic pump because it
- pumps equal quantities of Na^+ and K^+ across the membrane.
 - pumps hydrogen ions out of the cell.
 - contributes to the membrane potential.
 - ionizes sodium and potassium atoms.
 - is used to drive the transport of other molecules against a concentration gradient.
68. The movement of potassium into an animal cell requires
- low cellular concentrations of sodium.
 - high cellular concentrations of potassium.
 - an energy source such as ATP or a proton gradient.
 - a cotransport protein.
 - a gradient of protons across the plasma membrane.
69. Ions diffuse across membranes down their
- chemical gradients.
 - concentration gradients.
 - electrical gradients.
 - electrochemical gradients.
 - A and B are correct.
70. What mechanisms do plants use to load sucrose produced by photosynthesis into specialized cells in the veins of leaves?
- an electrogenic pump
 - a proton pump
 - a cotransport protein
 - A and C only
 - A, B, and C

71. Proton pumps are used in various ways by members of every kingdom of organisms. What does this most probably mean?
- Proton pumps must have evolved before any living organisms were present on the earth.
 - Proton pumps are fundamental to all cell types.
 - The high concentration of protons in the ancient atmosphere must have necessitated a pump mechanism.
 - Cells with proton pumps were maintained in each Kingdom by natural selection.
 - Proton pumps are necessary to all cell membranes.
72. Several seriously epidemic viral diseases of earlier centuries were then incurable because they resulted in severe dehydration due to vomiting and diarrhea. Today they are usually not fatal because we have developed which of the following?
- antiviral medications that are efficient and work well with all viruses
 - antibiotics against the viruses in question
 - intravenous feeding techniques
 - medication to prevent blood loss
 - hydrating drinks that include high concentrations of salts and glucose
73. An organism with a cell wall would have the most difficulty doing which process?
- diffusion
 - osmosis
 - active transport
 - phagocytosis
 - facilitated diffusion
74. White blood cells engulf bacteria through what process?
- exocytosis
 - phagocytosis
 - pinocytosis
 - osmosis
 - receptor-mediated exocytosis
75. The difference between pinocytosis and receptor-mediated endocytosis is that
- pinocytosis brings only water into the cell, but receptor-mediated endocytosis brings in other molecules as well.
 - pinocytosis increases the surface area of the plasma membrane whereas receptor-mediated endocytosis decreases the plasma membrane surface area.
 - pinocytosis is nonselective in the molecules it brings into the cell, whereas receptor-mediated endocytosis offers more selectivity.
 - pinocytosis requires cellular energy, but receptor-mediated endocytosis does not.
 - pinocytosis can concentrate substances from the extracellular fluid, but receptor-mediated endocytosis cannot.
76. In receptor-mediated endocytosis, receptor molecules initially project to the outside of the cell. Where do they end up after endocytosis?
- on the outside of vesicles
 - on the inside surface of the cell membrane
 - on the inside surface of the vesicle
 - on the outer surface of the nucleus
 - on the ER
77. Which of the following factors would tend to increase membrane fluidity?
- a greater proportion of unsaturated phospholipids
 - a greater proportion of saturated phospholipids
 - a lower temperature
 - a relatively high protein content in the membrane
 - a greater proportion of relatively large glycolipids compared with lipids having smaller molecular masses

AP Biology-Chapter #6 & 7 Review Answer Section

MULTIPLE CHOICE

1. ANS: E	PTS: 1	TOP: Concept 6.2	MSC: Knowledge/Comprehension
2. ANS: C	PTS: 1	TOP: Concept 6.2	MSC: Synthesis/Evaluation
3. ANS: D	PTS: 1	TOP: Concept 6.2	MSC: Knowledge/Comprehension
4. ANS: C	PTS: 1	TOP: Concept 6.3	MSC: Knowledge/Comprehension
5. ANS: C	PTS: 1	TOP: Concept 6.3	MSC: Synthesis/Evaluation
6. ANS: B	PTS: 1	TOP: Concepts 6.3-6.4	
MSC: Application/Analysis			
7. ANS: C	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
8. ANS: A	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
9. ANS: E	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
10. ANS: A	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
11. ANS: B	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
12. ANS: C	PTS: 1	TOP: Concept 6.4	MSC: Application/Analysis
13. ANS: C	PTS: 1	TOP: Concept 6.4	MSC: Application/Analysis
14. ANS: B	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
15. ANS: D	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
16. ANS: A	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
17. ANS: B	PTS: 1	TOP: Concept 6.4	MSC: Knowledge/Comprehension
18. ANS: C	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
19. ANS: C	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
20. ANS: E	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
21. ANS: B	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
22. ANS: D	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
23. ANS: D	PTS: 1	TOP: Concept 6.5	MSC: Application/Analysis
24. ANS: A	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
25. ANS: D	PTS: 1	TOP: Concept 6.5	MSC: Knowledge/Comprehension
26. ANS: D	PTS: 1	TOP: Concept 6.5	MSC: Application/Analysis
27. ANS: A	PTS: 1	TOP: Concept 6.6	MSC: Knowledge/Comprehension
28. ANS: D	PTS: 1	TOP: Concept 6.6	MSC: Knowledge/Comprehension
29. ANS: C	PTS: 1	TOP: Concept 6.7	MSC: Application/Analysis
30. ANS: D	PTS: 1	TOP: Concept 6.7	MSC: Knowledge/Comprehension
31. ANS: C	PTS: 1	TOP: Concept 6.7	MSC: Knowledge/Comprehension
32. ANS: E	PTS: 1	TOP: Concept 6.7	MSC: Knowledge/Comprehension
33. ANS: C	PTS: 1	TOP: Self-Quiz Questions	
34. ANS: B	PTS: 1	TOP: Self-Quiz Questions	
35. ANS: D	PTS: 1	TOP: Self-Quiz Questions	
36. ANS: D	PTS: 1	TOP: Self-Quiz Questions	
37. ANS: B	PTS: 1	TOP: Self-Quiz Questions	
38. ANS: C	PTS: 1	TOP: Self-Quiz Questions	
39. ANS: A	PTS: 1	TOP: Self-Quiz Questions	

40.	ANS: A	PTS: 1	TOP: Concept 7.1	MSC: Knowledge/Comprehension
41.	ANS: A	PTS: 1	TOP: Concept 7.1	MSC: Knowledge/Comprehension
42.	ANS: A	PTS: 1	TOP: Concept 7.1	MSC: Knowledge/Comprehension
43.	ANS: C	PTS: 1	TOP: Concept 7.1	MSC: Synthesis/Evaluation
44.	ANS: A	PTS: 1	TOP: Concept 7.1	MSC: Knowledge/Comprehension
45.	ANS: C	PTS: 1	TOP: Concept 7.1	MSC: Knowledge/Comprehension
46.	ANS: B	PTS: 1	TOP: Concept 7.2	MSC: Knowledge/Comprehension
47.	ANS: B	PTS: 1	TOP: Concept 7.2	MSC: Knowledge/Comprehension
48.	ANS: D	PTS: 1	TOP: Concept 7.2	MSC: Application/Analysis
49.	ANS: A	PTS: 1	TOP: Concept 7.2	MSC: Application/Analysis
50.	ANS: C	PTS: 1	TOP: Concept 7.2	MSC: Knowledge/Comprehension
51.	ANS: E	PTS: 1	TOP: Concept 7.2	MSC: Knowledge/Comprehension
52.	ANS: C	PTS: 1	TOP: Concept 7.2	MSC: Knowledge/Comprehension
53.	ANS: B	PTS: 1	TOP: Concept 7.2	MSC: Application/Analysis
54.	ANS: C	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
55.	ANS: C	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
56.	ANS: C	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
57.	ANS: C	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
58.	ANS: E	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
59.	ANS: B	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
60.	ANS: D	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
61.	ANS: D	PTS: 1	TOP: Concept 7.3	MSC: Knowledge/Comprehension
62.	ANS: D	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
63.	ANS: B	PTS: 1	TOP: Concept 7.3	MSC: Synthesis/Evaluation
64.	ANS: E	PTS: 1	TOP: Concept 7.3	MSC: Application/Analysis
65.	ANS: C	PTS: 1	TOP: Concept 7.4	MSC: Application/Analysis
66.	ANS: C	PTS: 1	TOP: Concept 7.4	MSC: Knowledge/Comprehension
67.	ANS: C	PTS: 1	TOP: Concept 7.4	MSC: Knowledge/Comprehension
68.	ANS: C	PTS: 1	TOP: Concept 7.4	MSC: Knowledge/Comprehension
69.	ANS: D	PTS: 1	TOP: Concept 7.4	MSC: Knowledge/Comprehension
70.	ANS: E	PTS: 1	TOP: Concept 7.4	MSC: Knowledge/Comprehension
71.	ANS: D	PTS: 1	TOP: Concept 7.4	MSC: Synthesis/Evaluation
72.	ANS: E	PTS: 1	TOP: Concept 7.4	MSC: Application/Analysis
73.	ANS: D	PTS: 1	TOP: Concept 7.5	MSC: Knowledge/Comprehension
74.	ANS: B	PTS: 1	TOP: Concept 7.5	MSC: Knowledge/Comprehension
75.	ANS: A	PTS: 1	TOP: Concept 7.5	MSC: Knowledge/Comprehension
76.	ANS: C	PTS: 1	TOP: Concept 7.5	MSC: Knowledge/Comprehension
77.	ANS: A	PTS: 1	TOP: Self-Quiz Questions	