MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) The monomers of DNA and RNA are
   A) nucleotides. B) nucleic acids. C) fatty acids. D) monosaccharides.

2) Which of the following statements regarding DNA is false?
   A) One DNA molecule can include four different nucleotides in its structure.
   B) DNA uses the sugar deoxyribose.
   C) DNA uses the nitrogenous base uracil.
   D) DNA molecules have a sugar-phosphate backbone.

3) Which of the following statements regarding RNA is false?
   A) RNA molecules have a sugar-phosphate backbone.
   B) RNA uses the nitrogenous base uracil.
   C) One RNA molecule can include four different nucleotides in its structure.
   D) RNA uses the sugar dextrose.

4) How would the shape of a DNA molecule change if adenine paired with guanine and cytosine paired with thymine?
   A) The DNA molecule would be circular.
   B) The DNA molecule would be longer.
   C) The DNA molecule would be shorter.
   D) The DNA molecule would have irregular widths along its length.

5) Which of the following statements regarding the structure of DNA is false?
   A) The sequence of nucleotides along the length of a DNA strand is restricted by the base-pairing rules.
   B) Watson and Crick received a Nobel Prize for their description of the structure of DNA.
   C) The DNA molecule has a uniform diameter.
   D) In a DNA molecule, adenine bonds to thymine and guanine to cytosine.

6) Which of the following statements regarding a DNA double helix is always true?
   A) The amount of adenine is equal to the amount of cytosine, and the amount of guanine is equal to the amount of thymine.
   B) The amount of adenine is equal to the amount of uracil, and the amount of guanine is equal to the amount of cytosine.
   C) The amount of adenine is equal to the amount of thymine, and the amount of guanine is equal to the amount of cytosine.
   D) The amount of adenine is equal to the amount of guanine, and the amount of thymine is equal to the amount of cytosine.

7) DNA replication
   A) results in the formation of four new DNA strands.
   B) uses each strand of a DNA molecule as a template for the creation of a new strand.
   C) occurs through the addition of nucleotides to the end of the parental DNA molecule.
   D) begins when two DNA molecules join together to exchange segments.
8) When one DNA molecule is copied to make two DNA molecules, the new DNA contains
   A) none of the parent DNA.       B) 75% of the parent DNA.
   C) 50% of the parent DNA.       D) 100% of the parent DNA

9) Multiple origins of replication on the DNA molecules of eukaryotic cells serve to
   A) remove errors in DNA replication.
   B) create multiple copies of the DNA molecule at the same time.
   C) assure the correct orientation of the two strands in the newly growing double helix.
   D) shorten the time necessary for DNA replication.

10) Which of the following enzymes catalyzes the elongation of a new DNA strand?
    A) helicase
    B) DNA polymerase
    C) single-stranded binding protein
    D) ligase

11) Why does a DNA strand grow only in the 5' to 3' direction?
    A) because DNA polymerases can only add nucleotides to the 5' end of the growing molecule
    B) because DNA polymerases can only add nucleotides to the 3' end of the growing molecule
    C) because DNA polymerase requires the addition of a starter nucleotide at the 5' end
    D) because the DNA molecule only unwinds in the 5' to 3' direction

12) Which of the following options best depicts the flow of information when a gene directs the
    synthesis of a cellular component?
    A) DNA → RNA → protein
    B) RNA → DNA → RNA → protein
    C) protein → RNA → DNA
    D) DNA → tRNA → mRNA → protein

13) The transfer of genetic information from DNA to RNA is called
    A) translation.
    B) initiation.
    C) transcription.
    D) elongation.

14) The "one gene–one polypeptide" theory states that
    A) the function of each polypeptide is to regulate the synthesis of each corresponding gene.
    B) the synthesis of each gene is catalyzed by one specific enzyme.
    C) the synthesis of each enzyme is catalyzed by one specific gene.
    D) the function of an individual gene is to dictate the production of a specific polypeptide.

15) If the left end of the daughter strand indicated in the figure (see arrow) is being synthesized in one
    continuous piece, then

   A) the DNA at point C is being synthesized in one continuous piece.
   B) the DNA at point D is being synthesized in one continuous piece.
   C) the DNA at point B is being synthesized in small pieces.
   D) the DNA at point A is being synthesized in one continuous piece.
16) Experiments have demonstrated that the "words" of the genetic code (the units that specify amino acids) are
A) two-nucleotide sequences.  B) three-nucleotide sequences.
C) nucleotide sequences of various lengths.  D) single nucleotides.

17) The directions for each amino acid in a polypeptide are indicated by a codon that consists of _______ nucleotide(s) in an RNA molecule.
A) 5  B) 2  C) 4  D) 3

18) We would expect that a 15-nucleotide sequence ending with a stop codon will direct the production of a polypeptide that consists of

19) In the genetic code,
A) some codons specify more than one amino acid.
B) some codons consist of two nucleotides.
C) many amino acids are specified by more than one codon.
D) some amino acids are not specified by any codons.

20) What nucleotide sequence would be found on the partner DNA strand of the strand shown?
A) TGUGU  B) ACTGT  C) UGAGA  D) TGACA

21) Which of the following enzymes catalyzes the linking together of RNA nucleotides to form RNA?
A) a ribozyme  B) tRNA
C) RNA polymerase  D) RNA ligase
22) Which of the following occurs when RNA polymerase attaches to the promoter DNA?
   A) termination of the RNA molecule  
   B) elongation of the growing RNA molecule  
   C) initiation of a new RNA molecule  
   D) initiation of a new polypeptide chain

23) _______ marks the end of a gene and causes transcription to stop.
   A) A terminator  
   B) RNA ligase  
   C) RNA polymerase  
   D) Methionine

24) Which of the following statements about eukaryotic RNA is true?
   A) A small cap of extra nucleotides is added to both ends of the RNA.  
   B) Exons are spliced together.  
   C) Introns are added to the RNA.  
   D) The modified RNA molecule is transported into the nucleus.

25) Which of the following takes place during translation?
   A) DNA replication  
   B) the conversion of genetic information from the language of proteins to the language of enzymes  
   C) the conversion of genetic information from DNA nucleotides into RNA nucleotides  
   D) the conversion of genetic information from the language of nucleic acids to the language of proteins

26) If one strand of DNA is CGGTAC, the corresponding strand would be
   A) TAACGT.  
   B) GCCAUC.  
   C) GCCTAG.  
   D) GCCATG.

27) The copying mechanism of DNA is most like
   A) mixing flour, sugar, and water to make bread dough.  
   B) carving a figure out of wood.  
   C) using a photographic negative to make a positive image.  
   D) dripping water out of a faucet.

28) Which of the following is a function of a tRNA molecule?
   A) helping to translate codons into nucleic acids  
   B) recognizing the appropriate anticodons in mRNA  
   C) transferring nucleotides to rRNA  
   D) joining to only one specific type of amino acid

29) Which of the following is not needed in order for translation to occur?
   A) tRNA  
   B) sources of energy, including ATP  
   C) DNA template  
   D) ribosomes

30) Which of the following statements about ribosomes is false?
   A) Each ribosome has two binding sites for tRNA.  
   B) Subunits of RNA are made of proteins and ribosomal RNA.  
   C) The ribosomes of prokaryotes and eukaryotes are the same in structure and function.  
   D) A ribosome consists of two subunits.
31) Which of the following options most accurately lists the sequence of events in translation?
   A) peptide bond formation → codon recognition → translocation → termination
   B) codon recognition → peptide bond formation → translocation → termination
   C) codon recognition → translocation → peptide bond formation → termination
   D) codon recognition → peptide bond formation → termination → translocation

32) Which of the following statements regarding the flow of genetic information is false?
   A) Transcription occurs in the cytoplasm of eukaryotic cells.
   B) Polypeptides form proteins that determine the appearance and function of the cell and organism.
   C) Ribosomes function as factories that coordinate the functioning of mRNA and tRNA.
   D) Eukaryotic mRNA is processed in several ways before export out of the nucleus.

33) Any change in the nucleotide sequence of DNA is called
   A) a mutagen.           B) an anticodon.
   C) a base substitution. D) a mutation.

34) A physical or chemical agent that changes the nucleotide sequence of DNA is called a(n)
   A) transposon.           B) mutagen.
   C) terminator.           D) anticodon.

35) The relationship between DNA and chromosomes is most like
   A) the candy shell surrounding the chocolate in a piece of M & M candy.
   B) a spoon cradling some peas.
   C) thread wrapped around a spool.
   D) an egg yolk inside of an egg.

36) Which of the following statements regarding DNA packing is false?
   A) A nucleosome consists of DNA wound around a protein core of eight histone molecules.
   B) DNA packing tends to promote gene expression.
   C) Prokaryotes have proteins analogous to histones.
   D) Highly compacted chromatin is generally not expressed at all.

37) RNA splicing involves the
   A) removal of exons from the molecule.
   B) addition of a nucleotide "tail" to the molecule.
   C) addition of a nucleotide "cap" to the molecule.
   D) removal of introns from the molecule.

38) The coding regions of a gene (the portions that are expressed as polypeptide sequences) are called
   A) proto-oncogenes.     B) introns.
   C) redundant coding sections.     D) exons.

39) Which of the following permits a single gene to code for more than one polypeptide?
   A) alternative RNA splicing
   B) retention of different introns in the final version of the different mRNA strands
   C) genetic differentiation
   D) addition of different types of caps and tails to the final version of the mRNA strands
40) Which of the following mechanisms of controlling gene expression occurs outside of the nucleus?
   A) adding a cap and tail to RNA  
   B) RNA splicing  
   C) translation  
   D) DNA packing/unpacking

41) Transcription factors attach to
   A) signal molecules.  
   B) plasma membrane receptors.  
   C) mRNA.  
   D) DNA.

42) Which structure in this figure shows one complete nucleosome?

   A) structure A  
   B) structure B  
   C) structure C  
   D) structure D

The following figure is adapted from C. K. Mathews and K. E. van Holde, Biochemistry, 2nd ed. 
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43) Which of the following helps maintain the structure of chromosomes and control the activity of genes?
   A) centromeres  
   B) ribosomes  
   C) proteins  
   D) the nuclear membrane

44) Which of the following statements about genetics is true?
   A) Genes are proteins that produce DNA.  
   B) Each DNA molecule is a single strand of nucleotides.  
   C) DNA is made up of six different kinds of nucleotides.  
   D) Differences among organisms reflect different nucleotide sequences in their DNA.

45) How are these two amino acids attached together?
   A) amino group to carboxylic acid group  
   B) amino group to amino group  
   C) through a hydrolysis reaction  
   D) carboxylic acid group to carboxylic acid group

46) The results of dehydration synthesis can be reversed by
   A) the addition of an amino group.  
   B) hydrolysis.  
   C) condensation.  
   D) polymerization.

47) Amino acids can be distinguished from one another by
   A) the type of bond between the R group and the rest of the amino acid molecule.  
   B) the chemical properties of their R groups.  
   C) the number of R groups found on the amino acid molecules.  
   D) the chemical properties of their amino and carboxyl groups.

48) Proteins differ from one another because
   A) the sequence of amino acids in the polypeptide chain differs from protein to protein.  
   B) the number of nucleotides found in each protein varies from molecule to molecule.  
   C) each protein contains its own unique sequence of sugar molecules.  
   D) the peptide bonds linking amino acids differ from protein to protein.

49) Peptide bonds
   A) are used to form amino acids.  
   B) form between fatty acids.  
   C) link amino acids.  
   D) are formed by a hydrolysis reaction.
50) Which of the following statements about enzymes is false?
A) They increase the rate of chemical reactions.  
B) They are monomers used to build proteins.  
C) They function as chemical catalysts.  
D) They regulate virtually all chemical reactions in a cell.

51) Which of the following characteristics of protein will remain intact if the protein is denatured?
A) the shape of the protein  
B) the binding properties of the protein  
C) the function of the protein  
D) the number of amino acids in the protein

52) The primary structure of a protein is
A) an α helix or a pleated sheet.  
B) maintained by hydrogen bonds.  
C) composed of two or more polypeptide chains.  
D) the amino acid sequence of the polypeptide chain.

53) Which of the following is an example of secondary structure in a protein?
A) a globular shape  
B) a particular amino acid sequence  
C) an alpha helix  
D) the joining of two polypeptide chains

54) How are genes used by cells to build proteins?
A) DNA is transcribed into an amino acid sequence.  
B) The genes in RNA direct the synthesis of proteins directly.  
C) The genes in DNA direct the synthesis of an RNA molecule, which is used to build a protein.  
D) The genes in RNA direct the synthesis of a DNA molecule, which is used to build a protein.

55) Which of the following statements regarding nucleotides is false?
A) Nucleotides contain sugar molecules.  
B) Nucleotides can be linked together to form nucleic acids.  
C) Nucleotides contain lipids.  
D) Nucleotides contain nitrogenous bases.

56) Which of the following options correctly pairs a polymer and its monomer?
A) RNA, ribose  
B) collagen, nucleic acids  
C) cellulose, amino acids  
D) DNA, nucleotides

57) DNA differs from RNA because DNA
A) contains phosphate groups not found in RNA.  
B) contains the sugar ribose rather than the sugar deoxyribose.  
C) contains thymine in place of uracil.  
D) consists of a single rather than a double polynucleotide strand.

58) Plasma membranes are permeable to
A) small ions such as Na+.  
B) nonpolar molecules such as CO₂.  
C) large hydrophilic molecules such as starch.  
D) hydrophilic molecules such as glucose.
59) In the plasma membrane, the phospholipid heads
   A) are hydrophobic and face outward towards the aqueous solution on both sides of the
   membrane
   B) are hydrophilic and face outward towards the aqueous solution on both sides of the
   membrane
   C) are hydrophobic and face inward, shielded from water
   D) are hydrophilic and face inward, shielded from water

60) The nucleoid region of a prokaryotic cell
   A) separates the RNA from the cytoplasm.       B) is surrounded by a nucleoid membrane.
   C) contains the cell’s DNA.        D) contains the cell’s nucleoli.

61) The membranous compartmentalization of a cell
   A) requires the presence of a cell wall.
   B) is common to both prokaryotes and eukaryotes.
   C) allows different chemical conditions to be maintained in different parts of the cell.
   D) divides the cell into two equal-sized halves.

62) The complex of proteins and DNA in a nondividing cell is called
   A) a ribosome.       B) a lysosome.       C) chromatin.       D) a nucleolus.

63) The function of the nucleolus is
   A) to manufacture ribosomal RNA.       B) intracellular digestion.
   C) to store chromatin.       D) to manufacture polypeptides.

64) Protein synthesis requires the use of mRNA, which
   A) is made in the nucleolus.
   B) carries the message to the nucleus to synthesize new DNA during cell division.
   C) is translated by the ribosomes into the amino acid sequences of proteins.
   D) must be made by the ribosomes.

65) Which location in the cell is unlikely to contain ribosomes or ribosomal subunits?
   A) plasma membrane       B) endoplasmic reticulum
   C) nuclear envelope       D) cytoplasm

66) The endomembrane system includes all of the following organelles except the
   A) peroxisome.       B) Golgi apparatus.
   C) endoplasmic reticulum.       D) plasma membrane.

67) The two main functions of the rough endoplasmic reticulum are the production of
   A) hydrogen peroxide and steroid hormones secreted by the cell.
   B) ribosomes and steroid hormones.
   C) membrane and proteins secreted by the cell.
   D) mitochondria and proteins secreted by the cell.

68) Which of the following statements about lysosomes is false?
   A) Lysosomes help to digest worn-out or damaged organelles.
   B) Lysosomes destroy harmful bacteria engulfed by white blood cells.
   C) Lysosomes fuse with food vacuoles to expose nutrients to lysosomal enzymes.
   D) Lysosomes synthesize proteins from the recycled amino acids.
69) Which organelle is involved in the catabolism of fatty acids and the detoxification of alcohol?  
A) peroxosome  
B) Golgi apparatus  
C) ribosomes  
D) smooth ER

70) A child dies following a series of chronic bacterial infections. At the autopsy, the physicians are startled to see that the child’s white blood cells are loaded with vacuoles containing intact bacteria. Which of the following explanations could account for this finding?  
A) A defect in the lysosomes of the white blood cells prevented the cells from destroying engulfed bacteria.  
B) A defect in the rough endoplasmic reticulum prevented the synthesis of the antibodies (defensive proteins) that would have inactivated the bacteria.  
C) A defect in the cell walls of the white blood cells permitted bacteria to enter the cells.  
D) A defect in the Golgi apparatus prevented the cells from processing and excreting the bacteria.

After reading the paragraph, answer the question(s) that follow.

You’re conducting an experiment to determine the effect of different wavelengths of light on the absorption of carbon dioxide as an indicator of the rate of photosynthesis in aquatic ecosystems. If the rate of photosynthesis increases, the amount of carbon dioxide in the environment will decrease and vice versa. You’ve added an indicator to each solution. When the carbon dioxide concentration decreases, the color of the indicator solution also changes.

Small aquatic plants are placed into three containers of water mixed with carbon dioxide and indicator solution. Container A is placed under normal sunlight, B under green light, and C under red light. The containers are observed for a 24-hour period.

71) Based on your knowledge of the process of photosynthesis, the plant in the container placed under red light would probably  
A) absorb less CO₂ than the plants under green light.  
B) absorb the same amount of CO₂ as the plants under both the green light and normal sunlight.  
C) absorb no CO₂.  
D) absorb more CO₂ than the plants under the green light.

72) Carbon dioxide absorption is an appropriate indicator of photosynthesis because  
A) the energy in CO₂ is used to produce ATP and NADPH.  
B) plants produce oxygen gas by splitting CO₂.  
C) CO₂ is needed to produce sugars in the Calvin cycle.  
D) CO₂ is needed to complete the light reactions.

73) Which of the following are produced during the light reactions of photosynthesis?  
A) ADP, NADP⁺, O₂  
B) glucose, ADP, NADP⁺  
C) ATP, NADPH, O₂  
D) glucose, ADP, NADP⁺, CO₂

74) Which of the following is part of the light reaction?  
A) reduction of carbon  
B) regeneration of NADP⁺  
C) carbon fixation  
D) formation of waste products in the form of O₂
75) Which of the following is a normal process of photosynthesis that could not occur if all reaction centers were inactivated by a toxin?
   A) donation of excited electrons by chlorophyll \( a \) to a primary electron acceptor
   B) absorption of photons by carotenoids
   C) absorption of photons by chlorophyll \( b \)
   D) donation of excited electrons by chlorophyll \( b \) to a primary electron acceptor

76) The electron transport chains of the light reactions
   A) are located in the stroma.
   B) are found on the plasma membrane of mesophyll cells.
   C) provide energy for the citric acid cycle.
   D) shuttle electrons along in a series of redox reactions.

77) Which figure depicts an animal cell placed in a solution hypotonic to the cell?

A) cell A  B) cell B  C) cell C  D) cell D

78) The fluid mosaic model describes the plasma membrane as consisting of
   A) two layers of phospholipids with cholesterol sandwiched between them.
   B) diverse proteins embedded in a phospholipid bilayer.
   C) a phospholipid bilayer with embedded carbohydrates.
   D) carbohydrates and phospholipids that can drift in the membrane.

79) White blood cells (WBCs) are more resistant to lysis than red blood cells (RBCs). When looking at a sample of blood for WBCs, what could you do to reduce interference from RBCs?
   A) Mix the blood in a hypotonic solution, which will cause the RBCs to lyse.
   B) Mix the blood in an isotonic solution and allow the WBCs to float to the top.
   C) Mix the blood in a hypertonic solution, which will cause the RBCs to lyse.
   D) Mix the blood in a salty solution to cause the RBCs to lyse.
80) Which of the following is a typical feature of an ATP-driven active transport mechanism?
   A) The transport protein catalyzes the conversion of ADP to ATP.
   B) The transport protein is irreversibly phosphorylated as transport takes place.
   C) The transport protein must cross to the correct side of the membrane before the solute can
      bind to it.
   D) The solute moves against the concentration gradient.

81) Which of the following statements regarding active transport is false?
   A) Active transport is driven by the concentration gradient.
   B) Active transport uses ATP as an energy source.
   C) Active transport requires the cell to expend energy.
   D) Active transport can move a solute against its concentration gradient.

82) Which of the following must occur for a plant or animal to grow and develop normally?
   A) The organism must receive a supply of the appropriate hormones from its parents.
   B) The organism must be able to control the timing and rate of cell division in different parts of
      its body.
   C) Sufficient oxygen must be available to stimulate cell division.
   D) Sufficient light must be available to stimulate cell division.

83) Which of the following statements regarding the cell-cycle control system is false?
   A) The cell-cycle control system includes three key checkpoints to complete a cell cycle.
   B) The cell-cycle control system triggers and controls major events in the cell cycle.
   C) The cell-cycle control system operates independently of the growth factors.
   D) The cell-cycle control system receives messages from outside the cell that influence cell
      division.
84) Which trophic level in this food chain represents the secondary consumer?  

A) trophic level A  
B) trophic level B  
C) trophic level C  
D) trophic level D 

85) A community is composed of  

A) one species of organism living in a specific environment on Earth.  
B) potentially interacting populations of different kinds of organisms.  
C) living organisms and their nonliving environment.  
D) the factors that constitute an organism’s niche. 

86) An owl and a hawk both eat mice. Which of these describes the relationship between a hawk and an owl?  

A) competition  
B) predation  
C) parasitism  
D) mutualism 

87) When two different populations in a community benefit from their relationship with each other, the result is called  

A) competition.  
B) parasitism.  
C) benefism.  
D) mutualism.
88) The prokaryotes that cause tooth decay have a ________ relationship with humans.
A) predatory  B) competitive  C) parasitic  D) mutualistic

89) In addition to abiotic factors, community composition of plants can be severely compromised by
A) parasites and pathogens.  B) non-native birds.  C) introduction of chestnut trees.  D) rapid coevolution.

90) On Earth, most organic molecules are produced by
A) cellular respiration.  B) glycolysis.  C) photosynthesis.  D) hydrolysis.

91) In a hypothetical food chain consisting of grass, grasshoppers, sparrows, and hawks, the
grasshoppers are

92) In a food chain consisting of phytoplankton → zooplankton → fish → fishermen, the fishermen are
A) secondary consumers.  B) secondary producers.  C) quaternary consumers  D) tertiary consumers.

93) A biology teacher takes fish, algae, pond weed, invertebrates, and bottom muck from a local pond
and establishes them in an aquarium. When the system is stable, the teacher seals it into a large,
airtight glass box and leaves the box in a sunny location. After three months, the organisms in the
aquarium appear alive and healthy. Which of the following statements about the experiment is true?
A) During the three months, the biomass of animal life was greater than the biomass of plant life.
B) No energy has entered or left the glass box during the three months.
C) Some of the energy in the system has moved from one organism to another during the three
months.
D) The air in the glass box contains no carbon dioxide.

94) Given that CO₂ is produced by cellular respiration, why does the amount of CO₂ in the
atmosphere remain relatively constant? (When answering this question, exclude the impact of
human activities on atmospheric CO₂.)
A) CO₂ is converted in photosynthesis to carbohydrates.
B) CO₂ is trapped in dead organisms’ bodies.
C) CO₂ is split apart during photosynthesis.
D) CO₂ mostly forms carbonate rocks.

95) Carbon mainly cycles between the biotic and abiotic worlds through the processes of
A) evaporation and photosynthesis.  B) cellular respiration and photosynthesis.
C) transpiration and photosynthesis.  D) cellular respiration and transpiration.

96) Cyanobacteria
A) are the only prokaryotes with plantlike oxygen-generating photosynthesis.
B) are photosynthetic archaea.
C) are chemoautotrophs.
D) are eukaryotes and are the earliest type of algae.
97) Which of the following organisms first introduced oxygen into Earth's atmosphere?
   A) cyanobacteria  
   B) plants  
   C) early protozoans  
   D) green algae

98) The term for a close association between organisms of two or more species is
   A) interdependence.  
   B) colonialism.  
   C) associative living.  
   D) symbiosis.

After reading the paragraph, answer the question(s) that follow.

Americans spend up to $100 billion annually for bottled water (41 billion gallons). The only beverages with higher sales are carbonated soft drinks. Recent news stories have highlighted the fact that most bottled water comes from municipal water supplies (the same source as your tap water), although it may undergo an extra purification step called reverse osmosis.

Imagine two tanks that are separated by a membrane that's permeable to water, but not to the dissolved minerals present in the water. Tank A contains tap water and Tank B contains the purified water. Under normal conditions, the purified water would cross the membrane to dilute the more concentrated tap water solution. In the reverse osmosis process, pressure is applied to the tap water tank to force the water molecules across the membrane into the pure water tank.

99) After the reverse osmosis system has been operating for 30 minutes, the solution in Tank A would
   A) be hypertonic to Tank B.  
   B) move by passive transport to Tank B.  
   C) be hypotonic to Tank B.  
   D) be isotonic to Tank B.

100) If you shut the system off and pressure was no longer applied to Tank A, you would expect
    A) the water to reverse flow from Tank B to Tank A.  
    B) the water to flow from Tank A to Tank B.  
    C) the water to flow against the concentration gradient.  
    D) the water to flow in equal amounts in both directions.
Answer Key
Testname: SEMESTER EXAM PRACTICE

1) A
2) C
3) D
4) D
5) A
6) C
7) B
8) C
9) D
10) B
11) B
12) A
13) C
14) D
15) A
16) B
17) D
18) B
19) C
20) D
21) C
22) C
23) A
24) B
25) D
26) D
27) C
28) D
29) C
30) C
31) B
32) A
33) D
34) B
35) C
36) B
37) D
38) D
39) A
40) C
41) D
42) D
43) C
44) D
45) A
46) B
47) B
48) A
49) C
50) B
Answer Key
Testname: SEMESTER EXAM PRACTICE

51) D
52) D
53) C
54) C
55) C
56) D
57) C
58) B
59) B
60) C
61) C
62) C
63) A
64) C
65) A
66) A
67) C
68) D
69) A
70) A
71) D
72) C
73) C
74) D
75) A
76) D
77) A
78) B
79) A
80) D
81) A
82) B
83) C
84) C
85) B
86) A
87) D
88) C
89) A
90) C
91) D
92) D
93) C
94) A
95) B
96) A
97) A
98) D
99) A
100) A