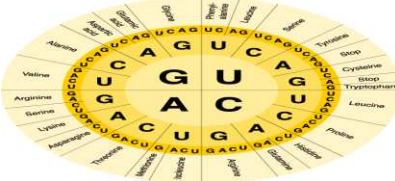

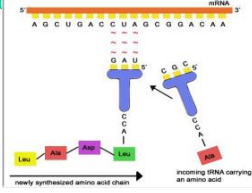
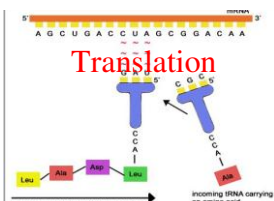


2nd Semester Focus on Final Study Guide Page 1

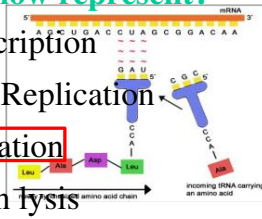
<p>2nd Semester Final Review</p> <p>48 Purple <i>Italicized</i> and <u>Underlined</u> Questions are very similar to questions on our "Second Semester Final"</p> <p>9 <u>Circled numbers</u> and <u>underlined</u> questions are the most missed.</p>	<h2 style="text-align: center;">5A DNA Structure</h2>	<p><u>1. (5A) Which of the following is found in both DNA & RNA?</u></p> <p>A. phosphate group + guanine + uracil</p> <p>B. phosphate group + guanine + cytosine</p> <p>C. ribose + phosphate group + uracil</p> <p>D. deoxyribose + phosphate group + thymine</p>
<p>2. (5A) The four bases in DNA are</p> <p>A. Adenine, thymine, guanine & cytosine</p> <p>B. Adenine, uracil, guanine & cytosine</p> <p>C. Deoxyribose, uracil, thymine & Adenine</p> <p>D. Ribose, uracil, thymine & Adenine</p>	<p><u>3. (5A) Which of the following represent the initials for the following? tRNA, rRNA and mRNA</u></p> <p>A. Transition, ribosomal & messenger</p> <p>B. Transfer, reconnaissance & messenger</p> <p>C. Transfer, ribosomal & methione</p> <p>D. Transfer, ribosomal & messenger</p>	<h2 style="text-align: center;">1D & 5B</h2> <h3 style="text-align: center;">Transcription & Translation</h3>
<p>4. (DNA & RNA 5b) What is produced during transcription?</p> <p>A. mRNA molecules</p> <p>B. DNA</p> <p>C. RNA polymerase</p> <p>D. proteins</p>	<p><u>5. (Genetics 5B) During mRNA transcription, a portion of a DNA strand that has the bases CTAGGT produces a messenger RNA transcript that has the following sequence of bases.</u></p> <p>A. GAUCCA</p> <p>B. GATCCA</p> <p>C. GATCAA</p> <p>D. TCGAAC</p> <p>DNA Strand CTAGGT mRNA Strand GAUCCA</p>	<p><u>6. (Cell Biology 1D) what does the figure below show?</u></p> <p>A. Anticodon B. the order in which amino acids are linked</p> <p>C. the code for splicing mRNA D. the genetic code</p> 
<p>7. (Cell Biology 1D) Which organelle is involved in both DNA Replication and Transcription?</p> <p>A. Ribosome</p> <p>B. Endoplasmic Reticulum</p> <p>C. Nucleus</p> <p>D. RNA and DNA</p>	<p><u>8. (Genetics 5B) During DNA replication, a DNA strand that has the bases CTAGGT produces a complementary strand with the bases?</u></p> <p>A. GAUCCA</p> <p>B. GATCCA</p> <p>C. GATCGA</p> <p>D. TCGAAC</p>	<p><u>9. What happens during the process of translation?</u></p> <p>a. mRNA is made from DNA</p> <p>b. Copies of DNA molecules are made</p> <p>c. The cell uses info from mRNA to make proteins</p> 
<h2 style="text-align: center;">4A & 4B</h2> <h3 style="text-align: center;">Transcription & Translation</h3>	<p style="text-align: center;">RNA & DNA 1D</p> <p style="text-align: center;">Central Dogma Flow of Genetic Information</p> <p style="text-align: center;">DNA → DNA → RNA → Protein</p> <p style="text-align: center;">#1</p> <p style="text-align: center;">DNA → RNA → Protein</p> <p style="text-align: center;">#2 (in the Nucleus)</p> <p style="text-align: center;">#3 (in Ribosomes)</p> <p><u>10. (4a) Process #1 is known as?</u></p> <p>A. Transcription</p> <p>B. translocation</p> <p>C. Translation</p> <p>D. Replication</p>	<p>11. (4a) The tRNA anticodon GAU is complementary to this mRNA codon</p> <p>A. CTU</p> <p>B. CUA</p> <p>C. GCG</p> <p>D. ATA</p> 



12. (4a) What is the final product of this process?
 A. mRNA only B. tRNA only
 C. No RNA **D. Protein**

13. (4a) What does the figure below represent?

- A. Transcription
- B. DNA Replication
- C. Translation**
- D. Protein lysis



14. (4a) Which defines what a codon is?

- A. The strong bond between two complementary nitrogenous bases.
- B. A free-floating base that attaches to an open DNA strand.
- C. A protein that begins transcription by breaking apart H bonds.
- D. The genetic code word of three bases that specify one amino acid.**

4C & 4D Mutations & Gene Expression

15. DNA & RNA 4C A single change in the sequence of nitrogenous bases in a DNA molecule would most likely result in?

- A. A gene mutation**
- B. nondisjunction of genes
- C. Crossing-over
- D. Polyploidy

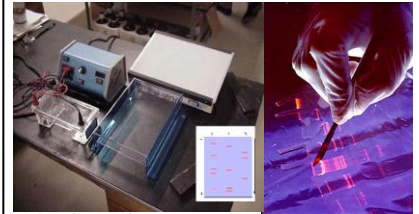
16. DNA & RNA 4D If a specific kind of protein is not continually used by a cell, the gene for that protein is

- A. always transcribed.
- B. never expresses.
- C. not regulated.
- D. turned on and off at different times**

17. DNA & RNA 4D Gene regulation in the eukaryotes _____.

- A. usually involves operons.
- B. is simpler than in prokaryotes.
- C. allows for cell specialization.**
- D. includes the action of an operator region.

5C Genetic Engineering



18. One function of gel electrophoresis is to

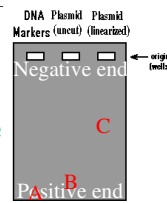
- A. Separate DNA fragments.**
- B. Cut DNA
- C. Recombine DNA

19. Analyzing DNA by gel electrophoresis allows researchers to

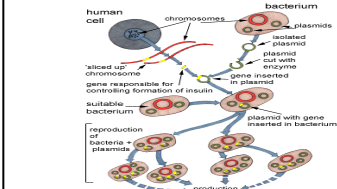


- A. Identify similarities and differences in the genomes of different kinds of organisms.**
- B. Compare the phenotypes of different organisms
- C. Cut DNA with restriction enzymes

20. On an electrophoresis gel, band A is closer to the positive end of the gel than band B. Which is True?



- A. Band B is smaller than Band A and moves faster through the gel.
- B. Band A is smaller than Band B and moves faster through the gel.**



21. During transformation,

- A. A prokaryote is changed into a eukaryote.**
- B. A cell takes in DNA from outside the cell.
- C. Foreign DNA is inserted into a plasmid.
- D. A cell is mutated.

22. What kind of cells were used to make Dolly?

- A. body cell and egg cell.**
- B. Egg cell only
- C. Body cell only
- D. Egg and sperm cell.



23. Which of the following is a clone?

- A. The adult sheep whose DNA was used to make dolly.
- B. A transgenic mouse.
- C. A funny person.
- D. Dolly**



24. 5C A DNA molecule produced by combining DNA from different sources is known as

- A. A mutant
- B. Recombinant DNA**
- C. A polyploid
- D. A hybrid

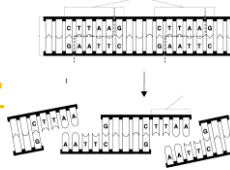
25. 5C Genetic engineering involves



- A. Editing a DNA sequence
- B. Reading a DNA sequence
- C. Reinserting DNA into living organisms**
- D. All of the above

26.

What does this figure show?



- A. Gel electrophoresis
- B. DNA sequencing
- C. Polymerase chain reaction**
- D. A restriction enzyme producing a DNA fragment.

Evolution 7A, 7B, 7C & 7D

27. 7d. Which of the following is consistent with Darwin's theory of evolution relative to individuals that survive to reproduce?

- A. They transmit characteristics acquired by use or disuse to their offspring



- B. They are the ones best suited to exist in their environment.**

28. 7d. According to Darwin's theory of natural selection, the individuals that tend to survive?

- A. transmit characteristics acquired by use or disuse to their offspring.
- B. have undergone mutations
- C. have the smallest # of offspring.
- D. have variations best suited to the environment.**



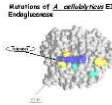
29. 7a. Natural Selection acts directly on _____?

- A. Alleles
- B. Genes
- C. Mutations
- D. Phenotypes**



30. 7c. The two main sources of genetic variation are _____?

- A. Directional & Disruptive Selection.
- B. Gene shuffling and mutations.**
- C. Genotypes and Phenotypes.
- D. Single gene and polygenic traits.



31. 7d. If a mutation introduces a new feather color in a bird population, which factor might determine whether the frequency of the new allele will increase?

- A. Whether the mutation makes some birds more fit for their environment than other birds.**
- B. How many other alleles are present.
- C. Whether the mutation was caused by nature or by humans.
- D. How many phenotypes the population has.

32. 7d. How can lethal alleles be preserved in a gene pool?

- A. Lethal alleles cannot be preserved in a gene pool.
- B. Lethal alleles can be preserved by gene regulation.
- C. Lethal alleles do not result in death and therefore can be maintained in a gene pool.
- D. Lethal alleles can be preserved in a gene pool in heterozygous individuals.**

33. 7d. A large population of flies was sprayed with a newly developed, fast-acting insecticide. The appearance of some flies that are resistant to this insecticide supports the concept that

- A. the environment does not change.
- B. Species traits tend to remain constant
- C. Variation exists within species**
- D. Biocides cause mutations.

34. 7d A change in the DNA sequence is called a

- A. recombination
- B. polygenic trait
- C. Mutations**
- D. Single-gene trait



35. 7a. Natural Selection may occur when?

- A. there are differences in survival and reproduction among those with different traits
- B. variation in fitness favor different environmental conditions.
- C. variation exists in a population
- D. all of the above**

36. 7d. Sickle cell anemia is a genetic disorder caused by a recessive gene. Which below is true?

- A. If you get the sickle cell anemia allele from only one parent, you will not get sickle cell anemia but you may pass the allele to your children**
- B. If you get the sickle cell anemia allele from only one parent, you will get sickle cell anemia and you will pass the allele to your children
- C. If you get the sickle cell anemia allele from both parents, you will not get sickle cell anemia but you may pass the allele to your children

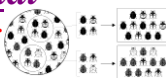
37. 7d. When tigers prey on antelopes some antelopes will escape. Which part of Darwin's theory would support this situation?

- A. Acquired characteristics
- B. Reproductive isolation
- C. Speciation due to mutations
- D. Survival of the fittest**



Evolution 7E

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<p>38. 7E According to the Hardy-Weinberg principle, the gene pool of a population will remain stable if</p> <p>A. The population is small B. Individuals migrate in and out of the population. C. Nonrandom mating occurs by artificial selection. D. No mutations occur</p>	<p>39. 7E The situation in which allele frequencies remain constant is called</p> <p>A. Evolution B. Natural Selection C. Genetic Drift D. Genetic Equilibrium E. Mutations Occur</p>	<p>40. 7E The gene frequencies in a population would most likely change if the following occurred.</p> <p>A. mutations B. A stable environment C. It develops into a large population D. Random mating</p>
<p>41. 7E What will most likely happen if the gene frequencies in a given population remain constant?</p> <p>A. Evolution will not take place within that population. B. Evolution within that population will occur at a faster rate. C. Recessive characteristics will increase in the population. D. Dominant characteristics will increase in the population.</p>	<h2>Evolution 8C & 8D</h2>	<p>42. 8C Which result is the effect of genetic drift on a small interbreeding population?</p> <p>A. The population tends to be more evolved. B. There is little effect. C. The genes in the population tend to be more heterogeneous D. The genes of the population tend to be more homologous.</p>
<p>43. 8C Which result is the effect of genetic drift on a very large breeding population?</p> <p>A. There is little effect B. The genes of the population tend to be more homologous C. The genes of the population tend to be more heterogeneous D. The population tends to be more evolved.</p>	<p>44. 8C Part of a population of rats in a forest leaves the forest to live in a meadow some distance away. Over many generations, the rats in the meadow will likely evolve-?</p> <p>A. More slowly than the forest rats. B. In exactly the same way as the forest rats. C. Different behaviors than that of the forest rats. D. By mating with the forest rats.</p>	<p>45. 8D A factor that is necessary for the formation of a new species is</p> <p>A. Reproduction at different times. B. Geographical barriers. C. Different mating behaviors D. Reproductive Isolation</p>
<p>46. 8d When two kinds of birds become reproductively isolated, it means they-?</p> <p>A. cannot have offspring. B. they live far apart from each other. C. can only breed with each other. D. are two separate species.</p>	<p>47. 8D A population of bobcats is divided into small groups, which are geographically separate. Over time, which development is most likely to occur?</p> <p>A. The groups will artificially select. B. The groups will compete with each other for food. C. The groups will have identical genotypes. D. The groups will evolve separately</p>	<p><u>48. 8D The separation of populations by barriers such as rivers, mountains, or bodies of water is called</u></p> <p>A. Genetic equilibrium B. Behavior Isolation C. Temporal isolation D. Geographic Isolation</p>
<p>49. 8D <u>The geographical isolation of two populations of a species tends to increase differences between their gene pools because it</u></p> <p>A. prevents interbreeding between the populations. B. prevents interbreeding within each population. C. causes temporal isolation of the two populations.</p>	<p>50. 8C As a result of a series of chance occurrences, genetic drift can lead to the following changes in a population Except</p> <p>A. An allele could become less common B. An allele could become more common C. An allele could be eliminated altogether D. An increase in the overall genetic variability</p>	<p><u>51. 8C Genetic drift tends to occur in populations that</u></p> <p>A. are very large.  B. are small C. are formed from new species. D. have unchanging allele frequencies.</p>

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Evolution 8A & 8B

52. 8A Which of the following phrases best defines evolution by Natural Selection ?
 A. An adaptation of a species to its environment.
 B. Changes in a species as it becomes more perfect.
 C. A process of change in a species over time.

53. 8B Which of the following types of species is most likely to increase in a population over a period of time?
 A. A very specialized species.
 B. A species with a lot of competition.
 C. A very diverse species.
 D. A species with lots of predators

54. 8B Which of the following is most likely to cause a decrease in a predator population ?
 A. A sudden environmental change.
 B. An increase in prey.
 C. Diversity within the population.
 D. A reduction in competition.

55. 8B Which statement describes the "selection" method of natural selection?
 A. Organisms that are better adapted tend to produce more offspring.
 B. Organisms that are better adapted tend to live longer.
 C. Organisms that are better adapted tend to kill off those that are not.
 D. Organisms that are better adapted tend to take over more area.

56. 8B Organisms become diverse as a result of?
 A. Inherited traits.
 B. Inbreeding.
 C. Genetic mutations.
 D. Population increases.

57. 8B Which reason is least likely to cause a species to become extinct?
 A. Abrupt climate change.
 B. Introduction of a new species.
 C. Genetic mutation in one individual.
 D. Destruction of habitat.

58. 8B Which group would be most likely to survive a major environmental change?
 A. A very specialized group.
 B. A group of producers.
 C. A very diverse group.
 D. A group of predators.

59. 8B Organisms become diverse as a result of?
 A. Inherited traits.
 B. Inbreeding.
 C. Genetic mutations.
 D. Population increases.

60. 8B What occurs when the adaptive characteristics of a species are not enough for the species to survive in a changed environment?
 A. Natural Selection.
 B. Extinction.
 C. Predation.
 D. Speciation.

61. 8B Diversity of species in an ecosystem helps to ensure that at least some species ____ ?
 A. are related to a common ancestor.
 B. will become extinct.
 C. will survive changes in the ecosystem.
 D. will evolve.

62. 8A Which of the following is NOT a way in which natural selection affects the distribution of phenotypes?
 A. Directional Selection
 B. Stabilizing Selection
 C. Disruptive Selection
 D. Chance Events

63. 8B According to Darwin's theory of natural selection, the individuals that tend to survive are those that have?
 A. Characteristics their parents acquired by use and disuse
 B. Characteristics that plant and animal breeders value
 C. Variations best suited to the environment
 D. The greatest number of offspring


64. 8A If a mutation introduces a new skin color in a bat population, which factor might determine whether the frequency of the new allele will increase?
 A. How many other alleles are present
 B. Whether the mutation makes some bats more fit for their environment than other bats
 C. Whether the mutation was caused by nature or by human intervention
 D. How many phenotypes the population has

65. 8B According to Darwin's theory of natural selection, individuals who survive are the ones best adapted for their environment. Their survival is due to the
 A. Possession of adaptations developed through use
 B. Possession of inherited adaptations that maximize fitness
 C. Choices made by plants and animal breeders
 D. Lack of competition within the species

66. 8A Which statement about evolution in the Galapagos finches is true?

- A. Mate choice likely plays no role in finch evolution
- B. Natural selection on beak size and shape is driven by the available food**
- C. None of the finch species is reproductively isolated
- D. Stabilizing selection has favored an intermediate beak type

67. 8d (Reinforced) When tigers prey on antelopes some antelopes will escape. Which part of Darwin's theory would support this situation?

- A. Acquired characteristics 
- B. Reproductive isolation
- C. Speciation due to mutations
- D. Survival of the fittest**

68. 8A Which of the following phrases best describes the results of natural selection?

- A. The natural variation found in all populations
- B. Unrelated but similar species living in different locations
- C. The struggle for existence undergone by all living things**

Evolution 8E

69. 8E The number and location of bones of many fossil vertebrates are similar to those in living vertebrates. Most biologist would probably explain this fact on the basis of

- A. the needs of the organisms.
- B. a common ancestor.**
- C. The struggle for existence
- D. The inheritance of acquired traits.

70. 8E What could you infer about the relative ages of the fossils of fish if found in the following order: fish with leg-like fins, bony fish with a jaw and a fin, and the jawless fish?

- A. The bony fish must be older than the jawless fish.**
- B. The fish with leg-like fins could be the youngest of the three fishes.
- C. Only the bony fish could be the oldest of the three fishes

71. 8E A mass extinction would encourage the rapid evolution of the surviving species

- A. by changing developmental genes
- B. by opening ecological niches**
- C. Because it killed all organisms that had coevolved.

72. 8E Examples of fossils include preserved

- A. eggs
- B. footprints
- C. Body parts
- D. All of the above**



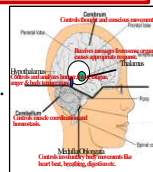
73. 8E To be useful as an index fossil, a species must have existed for

- A. Long periods over a wide geographic range.
- B. Long period over a small geographic range
- C. Short periods over a wide geographic range**
- D. Short period over small range.

Standard 9D&9E Electrochemical Impulse & Neurons

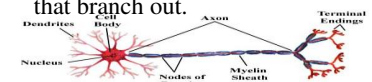
74. (9d) What is the function of the cerebrum?

- A. controls conscious and voluntary activities of the body.**
- B. controls heart rate.
- C. controls blood pressure.
- D. controls breathing.




75. (9e) Neurons are categorized by the

- A. direction in which they carry impulse.**
- B. amount of metabolic activity takes place.
- C. number of impulses or dendrites that branch out.




76. (9d) The cell body of a neuron collects information from which structure in the diagram?

- A. 1**
 - B. 2
 - C. 3
 - D. 4
- 
- Labels: Nucleus, Dendrites, Cell Body, Axon, Myelin Sheath, Terminal Endings.

77. 9d Which of the following best describes the direction and sequence of movement of a traveling nerve impulse?

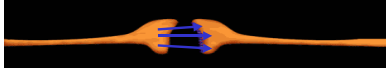
- A. axon, cell body, dendrites, synapse
- B. dendrites, cell body, axon, synapse**
- C. dendrites, axon, cell body, synapse
- D. Cell body, dendrites, synapse, axon

78. (9d) What is the function of the neurotransmitters?

- A. to transmit nerve impulses through the dendrites.
 - B. to stimulate the production of epinephrine.
 - C. to transmit nerve impulses across synapses.**
 - D. none of the above
- 

79. (9e) A change in the internal or external environment that initiates an impulse is known as a

- A. receptor
- B. response
- C. stimulus**
- D. synapse



81. (1d) Which division(s) of the peripheral nervous system transmit(s) impulses from sense organs to the central nervous system?

- A. sensory division**
- B. motor division
- C. sensory and motor division
- D. spinal cord division



82. 9E What are the two divisions of the peripheral nervous system?

- A. Brain & spinal Cord
- B. Somatic & autonomic
- C. Sensory & motor**
- D. Thalamus & hypothalamus

83. (9d) Which general category of sensory receptors detect variations in temperature?

- A. Thermoreceptors**
- B. Mechanoreceptors
- C. Photoreceptors
- D. Pain Receptors



84. 9B What is the function of the central nervous system?

- A. To relay messages
- B. To analyze information
- C. To process information
- D. All of the above**

85. 9E Which system controls the body's response to changes in its internal and external environment?

- A. Lymphatic System
- B. Excretory System
- C. Nervous System**
- D. Reproductive System

86. (9d) When an action potential reaches the end of a neuron, it triggers the release of?

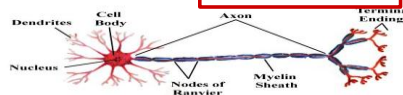
- A. Neurotransmitters**
- B. Sodium Ions
- C. Dendrites
- D. Receptors



87. (9d) Identify the cell below

- A. Cell Body
- B. Axon

- C. Dendrite
- D. Neuron**



Standard 9B & 9C

Endocrine Feedback System

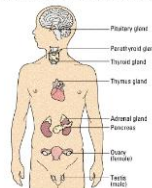
88. 9B Which system coordinates the body's response to changes in its internal and external environment?

- A. Excretory System
- B. Reproductive System
- C. Lymphatic System
- D. Nervous System**

89. (9c) Which gland fails to produce enough of its hormone in the disease diabetes mellitus?

- A. adrenal
- B. hypothalamus
- C. pancreas**
- D. parathyroid

The Endocrine System
Glands which release chemicals directly into the blood stream.



90. 9C A thermostat is a good example of a(an)

- A. Endocrine gland
- B. Feedback system**
- C. Bodystuffa
- D. Hormone-Receptor Complex

91. 9C Which process enables the body to maintain a stable body temp?

- A. The parasympathetic nervous system
- B. The sumpathetic nervous system
- C. Feedback inhibition**
- D. Action potential

92.9C Which system in a human is responsible for producing hormones from glands, to regulate metabolism, growth, and sexual development?

- A. Circulatory
- B. Digestive
- C. Endocrine**
- D. Respiratory

93. 9B Which system in a human is responsible for processing information and directing actions?

- A. Muscular System
- B. Reproductive System
- C. Immune System
- D. Nervous System**

94. 9C Which process enables the body to maintain a relatively stable internal environment?

- A. The parasympathetic nervous system
- B. The sympathetic nervous system
- C. Homeostasis**
- D. Action potential

95. (9c) The nervous system is to a telephone as the endocrine system is to a

- A. chemical message.
- B. television set.
- C. radio broadcast.**
- D. hormone.

Standard 9A Nutrients & Waste Removal

96. (9a) Which of the following is the correct order of nutrient (food) flow from the mouth to the cells?

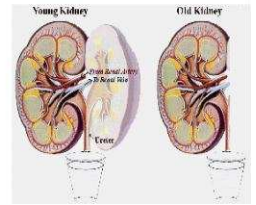
- A. Mouth, esophagus, small intestine, stomach, cells & bloodstream.
- B. Mouth, trachea, esophagus, stomach, large intestine, small intestine & colon.
- C. Mouth, stomach, large intestine, bloodstream & cells.
- D. Mouth, esophagus, stomach, small intestine, bloodstream & cells.**

97. (9a) Which of the following is the correct pathway for the distribution of oxygen to the cells.

- A. Nose, esophagus, trachea, lungs, bronchi, bloodstream and cell.
- B. Mouth or nose, trachea, bloodstream, alveoli, cell and bronchioles
- C. Nose, bronchioles, trachea, bronchi, bronchioles, alveoli, bloodstream & cells.
- D. Mouth or nose, trachea, bronchi, bronchioles, alveoli, bloodstream & cells**

98. 9A Removal of liquid wastes occurs in the

- A. Spleen
- B. Kidney**
- C. Pancreas
- D. Liver



99. 9A Oxygen is transported from the lungs to body cells by the system

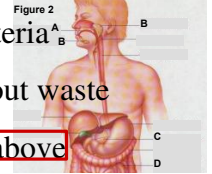
- A. Reproductive
- B. Excretory
- C. Respiratory
- D. Circulatory**

100. (9a) Which of the following is the correct order of blood flow to remove liquid wastes from the body?

- A. Nose, esophagus, trachea, lungs, bronchi, bloodstream and cell.
- B. Cells, bloodstream, kidney, ureter and urinary bladder.**
- C. Nose, bronchioles, trachea, bronchi, bronchioles, alveoli, bloodstream & cells.
- D. Cells, bloodstream, kidney, colon and small intestine.

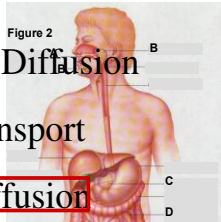
101. (9f) What is the purpose of the Digestive System?

- A. It breaks down food
- B. It kills bacteria
- C. It pushes out waste
- D. All of the above**



102. (9f) What is the mechanism that removes gas across the alveoli/capillary membrane?

- A. Osmosis
- B. Facilitated Diffusion
- C. Active Transport
- D. Simple Diffusion**

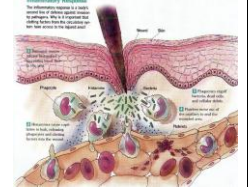


Standard 10A & 10D

Viruses & Bacteria
1st Line of Defense

103. 10A The body's nonspecific defense against invading pathogens include

- A. Killer Cells
- B. Antibodies
- C. Antibodies
- D. Tears, sweat, & mucus**



104. (10a) The body's most important nonspecific defense is

- A. The skin**
- B. Cell-mediated Immunity
- C. Inflammatory response
- D. Permanent Immunity



105. (10a) _____ is an enzyme found on the skin, in the saliva and in tears that kills bacteria by breaking down their cell wall.

- A. Antigens
- B. Amylase
- C. Lysozymes**
- D. Lysosomes



106. (10a) Which of the following is not a way that the skin acts as a nonspecific defense against disease?

- A. Production of sweat
- B. Forms an outer layer
- C. Production of antibodies**
- D. Production of lysozymes



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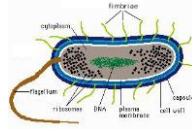
107. (10a) The body's first line of defense against disease is _____?

- A. Killer T Cells
- B. Antibodies
- C. The skin**
- D. Interferon
- E. Roving macrophages



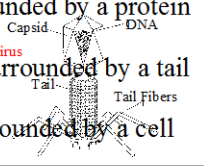
108. (10d) Antibiotics are used to treat infectious diseases caused by _____

- A. fungi
- B. viruses
- C. bacteria**
- D. Bacteria & viruses



109. (10d) What is the basic structure of a virus?

- A. DNA or RNA surrounded by a protein coat.
- B. A capsid surrounded by a protein coat
- C. A tail sheath surrounded by a tail fiber
- D. A tiny cell surrounded by a cell wall



110. (10d) _____ are used to prevent viral infection.

- A. Vaccines**
- B. Antibiotics
- C. Antibodies
- D. T Cells



111. (10d) Which of the following disease is NOT caused by a bacterium?

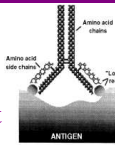
- A. Salmonella
- B. Tooth Decay
- C. Tuberculosis
- D. AIDS**

Standard 10B & 10C

The Lines of Defense Against Viruses & Bacteria

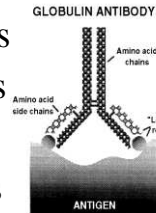
112. 10C Unlike passive immunity, in active immunity antibodies are produced by _____

- A. Your own body**
- B. The mother of an infant
- C. Other animals
- D. An autoimmune disease



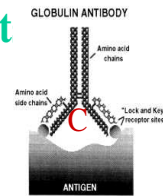
113. (10b) Humoral immunity is carried out by _____

- A. Killer T Cells
- B. Lymphocytes
- C. Antibodies**
- D. macrophages



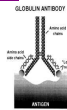
114. (10b) The entire two headed structure "C" represent _____

- A. Antigen
- B. Antibody**
- C. Killer T Cell
- D. Antigen binding site



115. (10b) Which of the following is the function of antibodies in the immune response?

- A. Antibodies produce antibiotics.
- B. Antibodies attach to antigens and attract phagocytes which engulf & destroy the antigen.**
- C. Antibodies produce interferon.



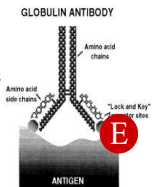
116. (10b) In the figure below the red bacterium represents a _____

- A. Antigen or pathogen**
- B. Antibody
- C. Killer T Cell
- D. Antigen binding site



117. (10c) An infectious disease is one caused by _____

- A. Heredity
- B. Materials in the environment
- C. Pathogens**
- D. Hemophilia



118. (10c) When a person receives a vaccine, his or her body _____

- A. Receives antibodies against a specific pathogen
- B. Creates plasma cells that can produce antibodies against that specific pathogen.**
- C. Has polio antibodies in the blood
- D. Has antipolio killer T cells in blood



119. (10c) A person who has received a vaccine against polio _____

- A. Is able to produce antibodies against polio.**
- B. Has polio antibodies in the blood.
- C. Has antipolio killer T cells in blood.
- D. Is more susceptible to the polio virus than someone who has not had the vaccine.

120. (10c) A vaccine contains _____ ?

- A. Antibodies
- B. Dying or weak viruses**
- C. antibiotics
- D. Fully potent fungus tissue

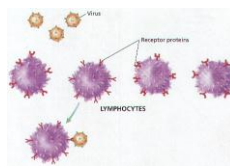


Standard 10E & 10F

HIV & The Immune Response

121. (10f) Cell-mediated immunity is carried out by

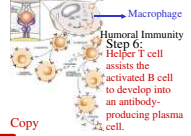
- bacteria
- viruses
- pathogens



• lymphocytes

122. (10e) HIV weakens the immune system by killing

- A. Antibodies
- B. B Cells
- C. Helper T Cells**
- D. Killer T Cells



123. (10e) Which of the following diseases causes a person who has the disease to suffer from a number of other infections because the virus that causes this disease attacks the immune system.

A. AIDS

B. SARS

C. Flu

D. Strep. Throat



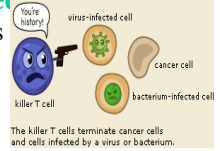
124. (10f) Which function is associated with phagocytes in the blood?

- A. Initiating blood Clots
- B. Transporting dissolved nutrients
- C. Producing Hormones
- D. Engulfing Bacteria**



125. (10e) White blood cells that bind to infected cells and secrete chemicals that disrupt the cell membranes of these cells are termed

- A. Helper T-cells
- B. Killer T-cells**
- C. Macrophages
- D. plasma Cells



126. (10e) Individuals with AIDS may have difficulty fighting off otherwise harmless infections because AIDS-

- A. causes colds and fevers that wipe out B cells.
- B. produces antibodies that attack healthy cells.
- C. attacks T cells that normally fight off infections**
- D. sits inactive in cells until it is triggered.

Standards 9F

127. (9f) True or False In a label displaying the "calorie" content of food, the unit is actually the Kilocalorie?

- A. True**
- B. False



128. (9f) True or False The bulk supplied by fats helps muscle to keep food and waste moving through the digestive system?

A. True

B. False

Carbohydrates



129. (9f) True or False: Every cell in the human body needs protein because this is the material in which many of the body's processes, including chemical reaction, take place.

A. True

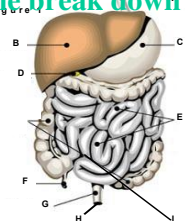
B. False
Water



130. (9f) True or False: Digestive Enzymes found in the small intestine break down undigested fats.

A. True

B. False



131. (9f) The energy to perform actions, as well as the materials from which body cells and tissues are made, comes from

A. Cellulose

B. Oxygen

C. Food

D. Blood



132. (9f) What can occur if a person does not take in enough water to replace what is lost?

A. Circulatory Problems

B. Dehydration

C. Nervous Problems

D. All of the above



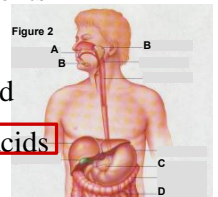
133. (9f) What is one of the roles of the pancreas in nutrition?

A. absorb nutrients

B. churn food

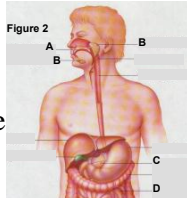
C. dissolve food

D. Neutralize acids



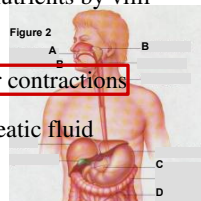
134. (9f) Where does the process of chemical digestion begin?

- A. stomach
- B. esophagus
- C. small intestine
- D. mouth**



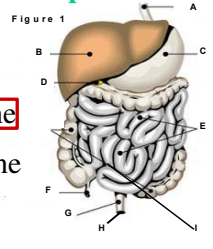
135. (9f) What does mechanical digestion in the stomach involve?

- A. absorption of nutrients by villi
- B. pepsin and bile
- C. strong muscular contractions**
- D. Bile and pancreatic fluid



136. (9f) Through which structure do wastes pass into the rectum?

- A. duodenum
- B. large intestine**
- C. small intestine
- D. villus



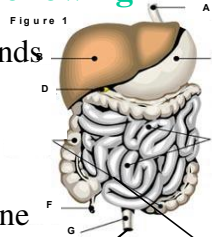
137. (9f) Hydrochloric acid found in the stomach does which of the following?

- A. Lubricates and protects stomach lining
- B. Neutralizes acids
- C. Dissolves food particles and kills many bacteria**
- D. Moistens food



138. (9f) Bile salts used to emulsify fats are made by which of the following organs.

- A. Salivary Glands
- B. Liver**
- C. Pancreas
- D. Small Intestine

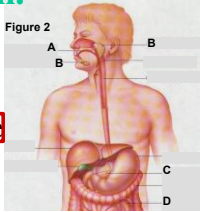


139. (9f) Why are bacteria found in the large intestines so important to our body.

- A. They give us diarrhea.
- B. They convert waste into vitamins.**
- C. They breakdown sugars.
- D. They initiate bile production.

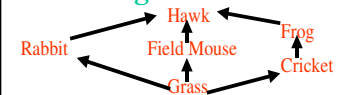
140. (9f) The digestion and absorption of most nutrients is done in the following organ.

- A. stomach
- B. esophagus
- C. small intestine**
- D. mouth



Standards 6A & 6B

141. 6B A food web is shown in the diagram below.



Which statement best describes a direct result of a decrease in the rabbit population due to disease?

- A. The hawk population will increase.**
- B. The grass population will increase.**
- C. The cricket population will decrease.
- D. The frog population will be eliminated.

142. 6B The sum total of the genetically-based variety of living organisms in a biosphere is called----

- A. species diversity
- B. biodiversity**
- C. sustainable use
- D. conservation biology

143. 6B An endangered species is

- A. A diseased animal
- B. A dangered predator
- C. A group of organisms near extinction.**
- D. All organisms at the top of the food chain.

144. 6B Which phrase best describes an ecosystem?

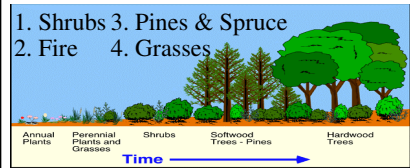
- A. All the organisms in a specific location.
- B. All the nonliving materials in a specific location.
- C. Some non-living materials and living organism in a specific location.**

145. 6B An increase in the Earth's average temperature from the build up of carbon dioxide and other gases in the atmosphere is called?

- A. the greenhouse effect
- B. ozone depletion
- C. global warming**
- D. particulate dispersion.



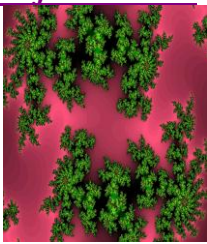
146. 6B Some scientist think that global warming is

- A. a natural variation in climate.
- B. a result of human activities.
- C. melting the polar ice caps.
- D. all of the above**



147. 6B The list above includes four stages of succession that follow a forest fire. Which is the proper order?

- A. 1,2,3 & 4
- B. 4,3, 1 & 2
- C. 2,1,4 & 3
- D. 2,4,1 & 3**

<h2 style="text-align: center;">Standards 6D, 6E & 6F</h2>	<p>148. 6f Only 10 percent of the energy stored in an organism can be passed on to the next trophic level. Of the remaining energy, some is used for the organism's life processes, and the rest is...</p> <p>A. used in reproduction B. stored as body tissue. C. stored as fat. D. eliminated as heat</p> 	<p>149. 6F Energy stored in organic molecules is passed from producers to consumers. This statement best describes an event in</p> <p>A. Ecological succession B. A food chain C. Natural selection D. photosynthesis</p>
<p>150. 6F Each level of the pyramid is smaller than the level below it because some of the matter is converted into.</p> <p>A. Energy lost due to movement B. waste that is released C. energy lost due to heat D. all of the above</p> 	<p>151. The action of a decomposer in the nitrogen cycle most directly aids in the</p> <p>A. Synthesis of proteins from nitrates B. Removal of nitrogen compounds from the atmosphere C. Restoration of nitrogen compounds to the soil D. Fixation of the atmospheric nitrogen</p>	<p>152. The maintenance of a self-sustaining ecosystem requires a</p> <p>A. Soil that is acidic B. Constant temperature C. Cycling of materials between organisms and their environment D. Greater number of herbivores than producers</p>
<p>153. 6E Green algae at the beginning of a food chain are</p> <p>A. producers B. herbivores C. consumers D. decomposers E. both A & C</p> 	<p>154. 6d Matter can recycle through the biosphere because</p> <p>A. Matter is passed out of bodies as waste. B. Biological Systems do not use up matter, they transform it. C. Matter is assembled into chemicals. D. Biological Systems use only carbon, oxygen, hydrogen and nitrogen.</p>	<p>155. 6f A diagram showing Primary, Secondary and Tertiary consumer would show a decrease in</p> <p>A. the number of organisms in each trophic level. B. available energy between lower & higher trophic levels. C. available biomass between lower & higher trophic levels D. All of the above</p>
<h2 style="text-align: center;">Standard 6C</h2>	<p>156. 6C There are 150 saguaro cacti plants per square kilometer in a certain area of Arizona desert. To which population characteristics does this information refer?</p> <p>A. Growth rate B. Age structure C. Geographic distribution D. Population density</p>	<p>157. 6C When organisms move out of the population they were born in, it is known as</p> <p>A. emigration B. abandonment C. immigration D. succession</p>
<p>158. 6C Biotic or abiotic resources in the environment that limits the size of a population is a</p> <p>A. Carrying Capacity. B. Limiting Nutrient. C. Limiting Factor D. Growth factor</p>	<p>159. 6C The number of organisms that an environment can support over a relatively long period of time is called</p> <p>A. Carrying Capacity. B. Logistic growth C. Limiting Factor D. Exponential growth</p>	<p>160. 6C If a population grows larger than the carrying capacity of the environment, the</p> <p>A. Death rate may rise. B. Birthrate may rise. C. Death rate must fall D. Birthrate must fall</p>

