

Chapter 1

Microbes by Design

True or False Questions

- T** 1. Bacteria have many variations in their life forms, but there is no hard evidence that one type of bacteria is progressively evolving into another more advanced type.
- F** 2. Bacteria are all invisible, potentially harmful little creatures.
- F** 3. *E. coli* devotes 98 percent of its energy to swimming from your bladder toward the kidney.
- F** 4. The eukaryotic cells of bacteria are generally much smaller and simpler in structure than prokaryotic cells.
- T** 5. Throughout history, *Escherichia coli* has had beneficial and also detrimental results in society.
- F** 6. A bacterium is said to be motile when it cannot move.
- T** 7. Resistance to antimicrobial drugs contributes to the growing number of cases of diseases once thought eradicated.
- F** 8. It is possible for germs to mutate and evolve into totally new diseases.
- T** 9. It is possible for some normally harmless bacteria, like *Serratia marcescens*, to change slightly, and in turn cause disease in immune compromised individuals.
- F** 10. Scientists have correctly applied “survival of the fittest” to make advances in medicine.

Multiple Choice

- b** 1. What percentage of bacteria is pathogenic?
 - a. 2%
 - b. 5%
 - c. 25%
 - d. 75%
 - e. 100%
- e** 2. Name the microbiologist who first described synthesis of the red pigment found in bacteria that often cause bread and communion wafers appear to have blood on it.
 - a) Joseph Lister
 - b) Robert Koch
 - c) Louis Pasteur
 - d) John Tyndall
 - e) Robert P. Williams
- c** 3. Give the name of the pigment responsible for the bright red color in the bacteria that appeared as “blood.”
 - a. tuberculin
 - b. chlorophyll
 - c. prodigiosin
 - d. hemoglobin

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e. rhodopsin

- b** 4. In his book, *Darwin's Black Box*, Dr. Michael Behe describes flagella as _____.
- being a design paradigm
 - having irreducible complexity
 - having the "most efficient machine in the universe"
 - evidence of evolution
 - necessary for the survival of bacteria
- e** 5. Some evolutionists believe some bacteria are _____.
- evolving into more complex and dangerous forms.
 - irreducibly complex.
 - primitive and basic.
 - unnecessary for life on earth.
 - a and c
- a** 6. Which bacteria produce vitamins for the body?
- E. coli*
 - Chlamydia trachomatis*
 - Legionella*
 - Treponema*
 - Rickettsia*
- c** 7. Which of the following scientists discredited the theory of spontaneous generation by boiling plant infusions in swan-necked flasks that maintained their sterility for long periods of time?
- Joseph Lister
 - Robert Koch
 - Louis Pasteur
 - John Tyndall
 - Anna Roby
- a** 8. The idea that microbes "pop" into existence from substances less complex than a living cell is termed:
- spontaneous generation
 - sporulation
 - binary fission
 - pleiotrophy
 - etiology
- b** 9. Microbiology is the study of
- small amounts of biology. (Yeayyy !)
 - organisms too small to seen with the unaided eye.
 - small unaided eyes.
 - small amounts of organisms.
 - small amounts of un-eyed organisms.
- e** 10. Name the brightly red pigmented bacteria that once thought to cause the "blood of Christ" to appear on communion wafers.
- E. coli*
 - Chlamydia trachomatis*

Chapter 1
Microbes by Design

- c. *Legionella pneumophila*
- d. *Treponema palladium*
- e. *Serratia marcescens*

Chapter 2 BACTERIA

True or False Questions

- F 1. The only group of bacteria that have flagellum are the spirilla.
- T 2. The cell walls of Gram-negative bacteria are more complex chemically than those of Gram-positive organisms.
- F 3. Bacteria thrive in cold temperatures which explain why there is more sickness in winter.
- T 4. The technique of Gram-staining allows a clearer view of the cell wall.
- F 5. When classifying bacteria by shape, it is important to master Latin since all the names come from Latin derivatives.
- F 6. The eukaryotic cells of bacteria are generally much smaller and simpler in structure than prokaryotic cells.
- F 7. Bacteria that are cultivated for some time in the laboratory have the same capacity to produce disease as those in the environment.
- T 8. Bacterial flagella are unique structures not equivalent to the cilia or flagella of protozoa.
- T 9. Bacteria have adapted to more different living conditions than any other group of organisms.
- F 10. At the turn of the 20th century, anthrax was the leading cause of death in the USA.

Multiple Choice

- c 1. The word, **bacteria**, comes from the Latin word meaning:
 - a. berry
 - b. corkscrew
 - c. staff or rod
 - d. ball
 - e. stick
- c 2. Which group moves by rotation of internal, flagellum-like filaments produces a corkscrew-like movement?
 - a. Proteobacteria
 - b. Chlamydias
 - c. Spirochetes
 - d. Gram-Positive Bacteria
 - e. Cyanobacteria
- c 3. Who was the first known scientist to observe microorganisms, including bacteria?
 - a. Louis Pasteur
 - b. Joseph Lister
 - c. Anton van Leeuwenhoek
 - d. Robert Koch
 - e. David DeWitt

Chapter 2 BACTERIA

- b** 4. What is the purpose of bacterial spores?
- They divide and increase in cell numbers, allowing the bacteria to reproduce.
 - Spore formation permits cells to survive adverse conditions.
 - Spores are an important food source for fastidious bacteria.
 - Spores allow bacteria to disperse to new locations.
 - b and d
- e** 5. When studying and classifying bacteria, it is important to consider which of the following?
- growth characteristics
 - morphology and metabolic way of life
 - molecular composition
 - staining characteristics
 - all of the above
- e** 6. Bacteria have thrived due to _____.
- varied metabolic abilities
 - small size
 - rapid reproductive rate and ability to form resistant spores
 - producing their own food through spore formation
 - a, b and c
- c** 7. In the group of bacteria called spirilla, you would see _____.
- Bacteria shaped like a berry.
 - Bacteria that were rod shaped.
 - Bacteria having a helical shape like a corkscrew.
 - Bacteria with smooth sides and no flagella.
 - Bacteria that form spores.
- e** 8. Which of the following bacteria would be a member of the bacilli group?
- A bacterium shaped as a short and thick cylinder.
 - A bacterium shaped like a long and slender rod.
 - A bacterium that is not perfectly round, but are flattened on one side or more or less elongated.
 - A bacterium that is slightly curved and less rigid with blunt ends.
 - a, b and d
- a** 9. The difference between Gram-positive and Gram-negative bacteria was discovered in the _____.
- late 1800's with more wide spread use of microscopes and improved staining techniques.
 - early 1900's as man began to study bacteria in order to develop antibiotics.
 - mid-1900's as man began to look for biohazards to use in war.
 - mid-1900's with the invention of the electron microscope.
 - late 1900's with the mapping of the genome of many bacteria.
- b** 10. The cell wall of a bacterium is best described as _____.
- Fluid, excreting biofilm
 - rigid with some elasticity
 - soft and pliable

Chapter 2 BACTERIA

- d. closely connected to its' cytoplasm
- e. of little importance to the function of bacteria

- c** 11. How fast can an *E. coli* bacterium swim?
- a. nearly 5 times the length of its body in one hour inside your urinary tract
 - b. nearly 10 times the length of its body in one minute inside your urinary tract
 - c. nearly 50 times the length of its body in one second inside your urinary tract
 - d. nearly 100 times the length of its body in one hour inside your urinary tract
 - e. *E. coli* bacterium do not swim at all.
- b** 12. The fastest growth of bacteria happens in which phase?
- a. lag phase
 - b. logarithmic phase
 - c. stationary phase
 - d. motile phase
 - e. death phase

Chapter 3 BACTERIA, Part 2

True or False Questions

- F 1. Ulcers are caused by stress and poor diet.
- F 2. A person exposed to *Treponema palladium* will develop a sore throat.
- T 3. Those plants which have mutualistic bacteria associated with their roots (i.e. legumes) include clover, peas, beans and alfalfa
- F 4. Archaea are different from bacteria because their cell membranes have unusual lipid composition.
- T 5. The most successful bacteria are the ones that live in harmony with their hosts.
- F 6. Infection of bacteria always leads to disease.
- T 7. A disease is an infection that impairs the normal state of health.
- F 8. Only Gram-positive bacteria, like the anthrax bacteria produce toxins.
- T 9. *H. pylori* was discovered by Barry Marshall and won the Nobel Prize in Physiology and Medicine in 2005.
- T 10. Anthrax is the likely cause for one of the “plagues of Egypt” that is described in the book of Exodus.

Multiple Choice

- e 1. To develop his famous postulates, Robert Koch first studied what disease?
 - a. tuberculosis
 - b. diphtheria
 - c. cholera
 - d. meningitis
 - e. anthrax
- d 2. What is the correct order for Koch’s postulates?
 - 1. The pure culture must cause the disease when inoculated into an experimental animal.
 - 2. The causative microorganism must be re-isolated from the experimental animal and re-identified in pure culture.
 - 3. The causative microorganism must be isolated and grown in pure culture.
 - 4. The causative microorganism must be present in every individual with the disease.
 - a. 1, 2, 3, 4
 - b. 2, 1, 4, 3
 - c. 4, 3, 2, 1
 - d. 4, 3, 1, 2
 - e. 2, 4, 1, 3

Chapter 3 BACTERIA, Part 2

- e 3. Koch discovered which species to be susceptible to cholera?
- guinea pigs
 - mice
 - cattle
 - dogs
 - man
- d 4. How long did it take to solve the mystery of Legionnaire's disease?
- 6 hours
 - 6 days
 - 6 weeks
 - 6 months
 - 6 years
- b 5. What is important about the species of bacteria called *Rhizobium leguminosarum*?
- They are denitrifying bacteria that add in the decomposition of organic matter.
 - They are nitrogen-fixing bacteria that add nourishment through root nodules.
 - They are nitrifying bacteria that release ammonia.
 - They prosper in high heat and give color to the waters of Yellowstone.
 - They are "oil-eating" microbes that clean up oil spills like the *Exxon Valdez*.
- d 6. What was one laboratory problem that faced the doctors researching Legionnaire's?
- Media pressure to solve the mystery.
 - Power failures that interfered with bacterial growth in incubators.
 - Failure of Equipment
 - Determining what the bacteria required as food.
 - Too many mice died in the laboratory.
- c 7. What previous experience helped Dr. Fliersman understand *Legionella pneumophila*?
- His father had worked on air conditioning units and he understood bacteria grew in them.
 - He had studied soil around nuclear plants.
 - He had studied thermophilic bacteria and recognized similarities.
 - He had studied diseases that plagued American veterans.
 - a and c
- c 9. The Archaean known as *Halobacterium* is characterized by _____.
- growing rapidly in fresh water ponds
 - it's purple light-sensitive pigment
 - it's red light-sensitive pigment
 - living only in cold climates
 - none of the above
- d 10. The microorganisms of the hot springs are:
- bacteria
 - algae
 - protozoa
 - a and b
 - a, b and c

Chapter 3
BACTERIA, Part 2

- d** 11. What are microbes that thrive in hot springs called?
- a. bacteria
 - b. heat mosaics
 - c. thermobacteria
 - d. thermophiles
 - e. hyperalgae
- c** 12. The action of nitrifying bacteria results in _____.
- a. destroying plant material
 - b. stripping the soil of its nutrients
 - c. enriching the soil
 - d. more insects attacking crops
 - e. less water being needed to grow crops

Chapter 4 THE PROTISTA

True or False Questions

- T** 1. The organelles of protozoa have a “parallel” function to that of organs in complex animals.
- T** 2. In malaria parasites, the characteristic reproduction method is sporulation.
- T** 3. Schizogony is reproduction by totally asexual means and produces new cells called merozoites.
- F** 4. These parasitic forms of protozoans are naturally more common in distribution than the free-living organisms,
- F** 5. The findings of Leeuwenhoek were readily accepted by British scientists.
- F** 6. Most protozoa are larger than bacteria.
- F** 7. All protists are microscopic.
- F** 8. Leeuwenhoek is known as the “Father of Biology”.
- T** 9. An amoeba has no visible internal structures except a nucleus.
- T** 10. Malaria parasites reproduce by both sporulation and schizogony depending on where it is in the life cycle.
- T** 11. Agar is a complex polysaccharide derived from these red algae.
- F** 12. Surgeon-Major Ronald Ross found organisms similar to the malaria parasite in horses.

Multiple Choice

- e** 1. Free-living protozoa are found:
 - a. in fresh water
 - b. in salt water
 - c. in the soil
 - d. in decaying organic matter everywhere
 - e. all of the above
- b** 2. “Amoeba” is derived from a Greek word meaning _____.
 - a. “false feet”
 - b. “move”
 - c. “simple”
 - d. “change”
 - e. “life-like”
- c** 3. An almost universal characteristic of protozoans is:
 - a. have low energy
 - b. to be parasitic
 - c. locomotion
 - d. a and b
 - e. a and c

Chapter 4 THE PROTISTA

- b 4. The protozoan *Euglena* ingest food through its:
- mouth
 - gullet
 - gill slits
 - eyespot
 - paramylon
- c 5. The cause of African trypanosomiasis is:
- the tsetse fly
 - Euglena*
 - Trypanosoma brucei*
 - Trypanosoma lamblia*
 - Paramecium caudatum*
- e 6. The protozoan *Giardia* has been known to:
- infect man
 - infect wildlife
 - possibly have infected Leeuwenhoek
 - exist in clear, running springs
 - none of the above
- e 7. The disease giardiasis can be avoided by:
- not drinking from streams
 - using iodine tablets when camping
 - city planners insuring the water supply is safe
 - changing baby diapers
 - a, b and c
- c 8. These organisms are characterized by hundreds of short, hair-like processes on their body.
- Flagellates
 - Amoebae
 - Ciliates
 - Sporozoa
 - none of the above
- e 9. Malaria means:
- "*Plasmodium Anopheles*"
 - "yellow fever"
 - "bad mosquito"
 - "swamp fever"
 - "bad air"
- c 10. What needs to be present for a definitive diagnosis of malaria to be made?
- Fever of 104 degrees or greater
 - Sudden onset of chills and shaking
 - Presence of an "O" ring in red blood cells
 - A high population of *Anopheles* mosquitoes
 - A dead *Anopheles* mosquito with malaria parasites in its saliva

Chapter 4
THE PROTISTA

Chapter 5 TRUE FUNGI

True or False Questions

- F 1. Fungi are not considered plants because they contain chlorophyll
- T 2. Scientist have many more species of fungi to discover.
- F 3. Yeasts and molds are considered distinctly separate fungal groups.
- T 4. Ascus means "tiny" spore-containing sac.
- T 5. *Aspergillus* can be used to make vinegar and also as an agent of bioterrorism.
- F 6. True yeast has many cells.
- T 7. Bacteria multiply faster than yeasts.
- T 8. The Creator created bacteria and fungi to live in harmony.
- F 9. Alexander Fleming had no idea that penicillin was important when it was discovered
- F 10. Antibiotic resistance has only occurred recently as patients insisted on antibiotics for non-bacterial infections.
- F 11. Fungi produce 90% of the antibiotics used by man.
- F 12. Fungi cells are smaller than bacteria cells.

Multiple Choice

- e 1. Which of the following is not a purpose of Fungi:
 - a. to help in decomposition of organic matter
 - b. to help prevent wheat rusts in crops
 - c. to help in the fermentation process
 - d. to help with photosynthesis
 - e. b and d only
- b 2. Which of the following is not caused by a fungus?
 - a. Mycosis
 - b. Tuberculosis
 - c. Pneumocystic pneumonia
 - d. fungous disease
 - e. all of the above
- a 3. Historically, fungi were first considered to be:
 - a. plants
 - b. microbes
 - c. bacteria
 - d. blastospores
 - e. parasites
- b 4. The scientist who first described fungi was:

Chapter 5
TRUE FUNGI

- a. Louis Pasteur
 - b. Robert Hooke
 - c. John Ray
 - d. Carolus Linnaeus
 - e. Joseph Lister
- b** 5. The long, slender filaments of a fungi body is known as
- a. spores
 - b. hyphae
 - c. buds
 - d. spores
 - e. chitin
- d** 6. The part of the mycelium that gives molds their characteristic fuzz is the:
- a. vegetative mycelium.
 - b. sporophore.
 - c. columella.
 - d. aerial mycelium.
 - e. spore
- c** 7. Which statement is not true regarding the genus *Rhizopus*:
- a. Bread mold belongs to the division of *Rhizopus*.
 - b. Mold in this division also attaches fruits.
 - c. *Rhizopus* s molds only reproduce asexually.
 - d. These molds use stolons in their reproduction.
 - e. *Rhizopus* form a septum during reproduction.
- b** 8. Sir Alexander Fleming could not purify or produce large amounts of:
- a. *P. Chrysogenum*
 - b. *P. Notatum*
 - c. *Tolyposporium niveum*
 - d. *Aspergillus flavus*
 - e. *Acremonium*
- a** 9. This strain was subjected to x-rays in order to produce more antibiotic.
- a. *P. chrysogenum*
 - b. *P. notatum*
 - c. *Tolyposporium niveum*
 - d. *Aspergillus flavus*
 - e. *Acremonium*
- c** 10. Penicillin was first widely used in:
- a. 1928
 - b. World War I
 - c. World War II
 - d. 1941
 - e. 1950

Chapter 6 VIRUSES

True or False Questions

- F 1. DNA viruses mutate faster than RNA viruses.
- F 2. The term *capsid*, from the Latin word *capsa*, meaning “hat.”
- F 3. Dental carries is the most common viral infection in humans.
- F 4. Photomicrographs of the virions of tobacco mosaic virus and an animal virus show that the architecture of virions is vastly different between the two.
- T 5. Viruses with the icosahedral shape have 20 equilateral triangular faces that provide a stable protein structure consistent with long-term survival.
- T 6. Once the HIV virus infects CD4+ T-cells (often called T-4 lymphocytes) in large numbers, it leads to a destruction of the immune system.
- F 7. Viruses are adequately described as “poisonous fluids.”
- T 8. Viruses change quickly because of their RNA genome instead of DNA genome.
- F 9. A virus can be classified as either prokaryotes or eukaryotes.
- T 10. The virion always contains at minimum both a nucleic acid and a protein.
- F 11. In 1995, African hospitals first dealt with a new disease caused by the Ebola virus.
- F 12. Modern science has discovered the vector for Ebola.

Multiple Choice

- b 1. Which features do viruses have in common with living cells?
 - a. the ability to crystallized
 - b. the ability to adapt and change
 - c. the ability to reproduce by themselves
 - d. the ability to metabolize
 - e. none of the above
- d 2. Since viruses are non-living until they enter a host, they are considered to be _____.
 - a. virions
 - b. renegade cell parts
 - c. opportunistic
 - d. parasitic
 - e. c and d
- e 3. Which of the following is **not** a characteristic of a virus?
 - a. relies on a host-cell metabolism
 - b. has a nucleic acid core surrounded by protein
 - c. contains only one or a few enzymes
 - d. relies on the hosts’ reproductive capabilities to spread
 - e. contains both DNA and RNA

Chapter 6 VIRUSES

- d 4. The size of the smallest viruses can be said to be _____.
- approximately the size of small bacteria
 - larger than 300 nm in diameter
 - highly visible with a light microscope
 - not much larger than the diameter of a double-stranded DNA helix
 - none of the above
- b 5. What is the best example of microevolution that we have?
- potato spindle tuber viroid
 - colds and flu
 - bacteria
 - Epstein-Barr virus
 - HIV causing cancer
- d 6. How would you **best** describe the shape of a helical virus?
- It is a regular polyhedron with 20 triangular faces and 12 corners
 - The capsomeres of each face form an equilateral triangle.
 - It is spherical in shape.
 - It resembles long rods that may be rigid or flexible.
 - The virus is enclosed by an envelop.
- e 7. The word *virus* comes from the Latin meaning word meaning _____?
- “invisible”
 - “tiny”
 - “microscopic”
 - “disease”
 - “poison”
- c 8. A structural property of HIV is _____.
- it displays helical symmetry
 - the genome is DNA
 - it contains two molecules of reverse transcriptase
 - it lacks a lipid – containing envelope
 - it’s diameter is around 50 nm
- e 9. How would you **best** describe the shape of an icosahedral virus?
- It is a regular polyhedron with 20 triangular faces and 12 corners
 - The capsomeres of each face form an equilateral triangle.
 - It is spherical in shape.
 - It resembles long rods that may be rigid or flexible.
 - a and b
- a 10. Bacterial viruses were first named _____ by _____.
- bacteriophages, D’Herelle
 - bacteriophages, Beijerinck
 - microbes, D’Herelle
 - microbes, Beijerinck

Chapter 7 Body Defenses

True or False Questions

- T 1. The immune system was designed to interact with microbes.
- F 2. The immune system cannot sense anything in the environment; this is the job of the eyes, ears, nose, and throat.
- T 3. An example of a positive interaction between the immune system and microbes is *E. coli* in the intestines that provide nutrients and vitamins for the human body.
- F 4. T cells are responsible for directly manufacturing antibodies.
- F 5. T cell receptors are identical to antibodies.
- F 6. The immune response is directed against all the body cells.
- F 7. All bacteria have dangerous antigens (germ molecules) on their surface.
- F 8. Antibody molecules are not flexible; they are very rigid in structure.
- T 9. IgA is the most abundant immunoglobulin found in the fluids of the body.
- T 10. Gene rearrangement is responsible for the variation of a theme in the antibody response and the generation of the various antibody types.
- F 11. IgG are the antibodies to first arrive during an infection.
- T 12. IgM are the largest antibodies.

Multiple Choice

- A 1. The study of host defenses and how they can be mobilized and directed specifically against an invading pathogen is termed:
 - a. immunology.
 - b. genetics.
 - c. endocrinology.
 - d. pathology.
 - e. physiology.
- A 2. An excessive, inappropriate, or dysfunctional immune response to germs may be the result of
 - a. stress.
 - b. allergies.
 - c. autoimmune diseases.
 - d. immunosuppressive diseases.
 - e. being young.

Chapter 7 Body Defenses

- E** 3. The human immunodeficiency virus (HIV) that causes the disease known as AIDS selectively infects _____ cells.
- CD 8 (suppressor T)
 - B cells
 - plasma
 - helper D
 - CD 4 (cytotoxic T)
- B** 4. The lymphatic system with its branching reticular fibers in the spleen, lymph nodes, and lymph capillaries best illustrates which Intelligent Design principle:
- correlation of structure and function
 - interwoven complexity
 - homeostasis
 - order and organization
 - maintenance of boundaries
- E** 5. The body defense systems with their **umbrella or bubble-like protection** is best illustrated in the life of:
- Louis Pasteur
 - Joseph Lister
 - Alexander Fleming
 - Dr. Gillen
 - David Vetter
- D** 6. The immune system with regards to its ability to adjust to new circumstances and where it learns and responds to highly specific pathogens best illustrate which Intelligent Design principle:
- correlation of structure and function
 - interwoven complexity
 - homeostasis
 - adaptation
 - maintenance of boundaries
- C** 7. One of the earliest researchers to explore the use of chemicals from tears to kill microbial pathogens was:
- Koch.
 - Hooke.
 - Fleming.
 - Ehrlich.
- E** 8. Phagocytes are important to the body because they:
- patrol the bloodstream and tissues engulfing foreign cells
 - occupy "fixed sites" within some tissues engulfing foreign cells
 - kill bacteria infected human cells
 - a and b
 - a, b, and c

Chapter 7

Body Defenses

- A** 9. In the organization of your defense system, phagocytic cells are best thought of as:
- a. a first line of defense
 - b. a second line of defense
 - c. a third line of defense
 - d. a site of bacterial growth
 - e. a source of antibodies for recognition purposes
- E** 10. The structure within phagocytic cells that first meets up with and ultimately results in the digestion of bacterial cells is the:
- a. nucleus
 - b. mitochondrion
 - c. residual body
 - d. cell wall
 - e. lysosome

EMERGING DISEASES

Chapter 8

True or False Questions

- F 1. The diseases we face today are exactly the same strains that have always existed.
- T 2. Weather can sometimes play a part in the emergence of a new disease.
- T 3. AIDS came to public awareness through an outbreak of *Pneumocystis pneumonia*.
- F 4. All people who test positive for HIV have symptoms of AIDS.
- F 5. The presence of *E. coli* 0157:H7 in the human intestine is a normal occurrence.
- F 6. The reason for the increase of flesh-eating bacteria has been established.
- F 7. It is possible for common cold viruses to mutate into more deadly viruses, like Ebola.
- F 8. Comparisons of Hantavirus genes suggest that this new virus.
- F 9. In wealthy developed countries with sophisticated health-care systems, infectious diseases are no longer a serious threat.
- T 10. *Cryptosporidium* is responsible for up to 30 percent of diarrheal illness in developing countries.
- T 11. Changes that make our lives more comfortable can also expose us to new diseases.
- F 12. *V. cholerae* 0139 is the same strain of cholera that plagued early pioneers in America.

Multiple Choice

- b 1. Medical principles of washing of hands, quarantines and facemasks were first recorded in:
 - a. Darwin's "Origin of Man"
 - b. the Bible
 - c. the writings of Hippocrates
 - d. Eastern mysticism
 - e. New Age philosophy
- e 2. Many people were proclaiming victory over germs however, new ones emerge due to:
 - a. large urban areas
 - b. germs evolving into new diseases
 - c. jet planes
 - d. blood banks were opening broad new avenues for infection
 - e. all but b
- d 3. A 1993 outbreak of cryptosporidiosis in Milwaukee was caused by:
 - a. contaminated raspberries
 - b. unsanitary conditions in a nursery school
 - c. contaminated lettuce
 - d. contaminated drinking water

EMERGING DISEASES

Chapter 8

- d 4. The increasing incidence of new plagues indicates that infectious diseases are not only not disappearing, but also seem to be _____.
- strengthening by attacking people with compromised immune systems
 - increasing
 - mutating into anti-biotic resistant varieties
 - re-emerging and increasing
 - a and c
- e 5. Some of the factors contributing to the emergence of Ebola are
- minor changes in existing organisms
 - the spread of known diseases to new geographic regions or populations
 - increased human exposure to new and unusual infectious agents
 - a and b
 - all of the above
- e 6. Lyme disease got its' name from:
- it is transmitted by a green tick
 - the doctor who discovered the cause
 - the convention where the first outbreak occurred
 - a bacteria called *Borrelia lymus*
 - the town where the first outbreak occurred
- c 7. What did the people with Lyme disease have in common?
- they all attended the same convention
 - they all lived in the city
 - they were all pet owners
 - they all had *Pneumocystis pneumonia*
 - they all developed chronic diarrhea
- a 8. Which of the following is not correct regarding AIDS.
- The immune system to be overactive due to the presence of HIV.
 - AIDS is transmitted through transfer of body fluids.
 - Once AIDS develops, it is always deadly.
 - Over 47 million people world-wide have HIV.
 - All choices are correct.
- c 9. *E. coli* 0157:H7 was first discovered in _____.
- 1976
 - 1981
 - 1982
 - 1993
 - 1995
- c 10. When investigating the cause of a new disease, researchers should consider _____.
- weather
 - disruption of natural environment
 - development of drug-resistant varieties of disease
 - infectious agents change abruptly and gain the ability to infect new hosts
 - germs arriving due to international travel of people and animals

Chapter 9 The Origin of Infectious Diseases

True or False Questions

- T** 1. Antimicrobial resistance can be due to spontaneous mutation or gene acquisition.
- T** 2. *M. leprae* probably represents a decayed bacterium from faster growing *Mycobacterium* species.
- F** 3. The microorganisms found on healthy skin make it vulnerable to pathogens.
- T** 4. One structural example of devolution in the human body is teeth and their susceptibility to dental caries.
- T** 5. The number one hospital acquired infection is MRSA.
- F** 6. It has already been proved that H5N1 can be transmitted from person to person easily.
- T** 7. Typhoid Mary presents an example of how God may have intended our human body to interact with potentially dangerous bacteria.
- F** 8. Influenza A virus is as virulent in birds as it is in humans.
- T** 9. In Hansen's Disease, the largest number of deformities develops from loss of pain sensation due to extensive nerve damage.
- F** 10. The information about horizontal gene transfer was the foundation of the microorganisms evolving into more complex forms.
- F** 11. Pathogens do not develop resistance against antibiotics through natural selection.
- T** 12. The current potential pandemic influenza strains, recently isolated from domestic fowl are H5N1, H7N7, and H9N2.

Multiple Choice

- B** 1. The 1918 flu epidemic is most likely due to:
 - a. antigenic drift of virus
 - b. total re-arrangement of chromosomal segments in the influenza virus
 - c. evolution of a cold virus into a flu virus
 - d. change in global climate
 - e. antigenic variation of rhinovirus.
- C** 2. Bird flu is caused by what strain?
 - a. Avian Virus #101
 - b. H1N2
 - c. H5N1
 - d. Duck Virus #202
 - e. Spanish Flu Virus
- A, D** 3. The biblical principles (or verses) that might explain the origin of bird flu come from which verses? (**Choose Two**)
 - a. Lev. 19: 19
 - b. Gen. 3:18
 - c. Rev. 21:3

Chapter 9

The Origin of Infectious Diseases

- d. Deut. 22:9
- e. John 3:16

- D** 4. What are pathogenicity islands?
- a. special nucleotides that code genes
 - b. strands of RNA that cause virulent characteristics
 - c. a short piece of naked RNA, only 300 to 400 nucleotides long, with no protein coat
 - d. discrete segments of DNA that encode virulence traits
 - e. a latent source of HIV DNA
- B** 5. What causes the virulence of influenza to change?
- a. infection of different kinds of vectors such as birds or swine
 - b. mutations and the reassortment of foreign RNA into the genetic material of the virus
 - c. antibiotic resistance
 - d. infection of immunodeficient individuals causes the virus to get stronger
 - e. the lack of research for anti-viral drugs
- D** 6. The origin of infectious disease can be explained by:
- a. Man's defenses
 - b. The microbe
 - c. Mobile genes
 - d. All of the above
- E** 7. The source of variation among microorganisms that were once identical is
- a. antibiotic resistance.
 - b. virulence factors.
 - c. genomic decay.
 - d. mutation.
 - e. all of the above
- D** 8. *Mycobacterium leprae* has a generation time of
- a. 20 minutes.
 - b. 1 hour.
 - c. 6 hours.
 - d. 12 days.
- D** 9. The plague bacillus is known as
- a. *Plasmodium vivax*.
 - b. *Pneumocystis carinii*.
 - c. *Streptococcus pyogenes*.
 - d. *Yersinia pestis*.
- B** 10. The bacterium that appears to have picked up a pathogenicity island and causes a common food-borne illness is:
- a. *Yersinia pestis*
 - b. *E. coli* O157H7
 - c. *E. coli* K 12
 - d. *Mycobacterium leprae*
 - e. a, b and d

Chapter 10 Plagues and Pestilence of the Future

True or False Questions

- F** 1. The third horse described in Revelation 6:7-8 is said to be “pale”. This refers to the paleness of a sick person or the pale yellow-green of a dying plant.
- T** 2. During WWII, Japan used biological warfare on China.
- T** 3. As few as ten bubonic plague cells can cause death.
- F** 4. *Jehovah Rapha* means the Great Physician who cleanses.
- T** 5. While the Egyptians were experiencing plagues, the Israelites were protected because they obeyed the heath principles in Levitical law.

Multiple Choice

- B** 1. The diseases that have most recently invoked fear have been:
 - a. Ebola
 - b. SARS and Bird-flu
 - c. Flesh-eating *Streptococcus*
 - d. All of the above
- B** 2. A plague in scripture denotes:
 - a. Pestilence alone
 - b. Pestilence and other calamities in nature
 - c. Famine
 - d. War
- D** 3. The fourth horseman of the apocalypse represents:
 - a. war
 - b. famine
 - c. religious deception
 - d. pestilence and disease
- D** 4. The fifth horseman is:
 - a. war/famine
 - b. religious deception
 - c. pestilence and disease
 - d. Jesus Christ
- A** 5. What fraction of the Earth’s population will see incredible devastation when the fourth horseman completes his ride?
 - a. $\frac{1}{4}$
 - b. $\frac{1}{2}$
 - c. $\frac{1}{8}$
 - d. $\frac{3}{4}$

Chapter 10
Plagues and Pestilence of the Future

- C** 6. Livor mortis is when:
- a. The skin shows signs of blood build up
 - b. Part of the physical death process
 - c. Skin color progressively changes from green to blue to purple then finally black
 - d. All of the above