Student name:\_\_\_\_\_\_\_\_\_\_

**1)** Microorganisms are best defined as organisms that \_\_\_\_\_\_\_.

A) cause human disease   
 B) lack a cell nucleus  
 C) are infectious particles  
 D) are too small to be seen with the unaided eye  
 E) can only be found growing in laboratories

**Question Details**Learning Outcome : 01.01 List the six types of microorganisms we will be studying in this book.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 1. Remember  
Section : 01.01  
Topic : Cellular Organization  
ASM Objective : 02.01 The structure and function of microorganisms have been revealed by the use of m  
Accessibility : Keyboard Navigation

**2)** Which of the following are not considered microorganisms?

A) Mosquitoes   
 B) Protozoa  
 C) Bacteria  
 D) Viruses  
 E) Fungi

**Question Details**Learning Outcome : 01.01 List the six types of microorganisms we will be studying in this book.  
ASM Topic : Module 05 Systems  
ASM Objective : 05.01 Microorganisms are ubiquitous and live in diverse and dynamic ecosystems.  
Bloom's : 2. Understand  
Section : 01.01  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**3)** Helminths are \_\_\_\_\_\_.

A) bacteria   
 B) protozoa  
 C) molds  
 D) parasitic worms  
 E) infectious particles

**Question Details**Learning Outcome : 01.01 List the six types of microorganisms we will be studying in this book.  
ASM Topic : Module 02 Structure and Function  
ASM Objective : 02.04 While microscopic eukaryotes (for example, fungi, protozoa, and algae) carry ou  
Bloom's : 1. Remember  
Section : 01.01  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**4)** Among these types of microorganisms, the \_\_\_\_\_\_ arenoncellular.

A) viruses   
 B) helminths  
 C) protozoans  
 D) bacteria

**Question Details**Learning Outcome : 01.01 List the six types of microorganisms we will be studying in this book.  
Learning Outcome : 01.08 Identify two types of acellular microorganisms.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 1. Remember  
Section : 01.01  
Section : 01.05  
Topic : Cellular Organization  
ASM Objective : 02.05 The replication cycles of viruses (lytic and lysogenic) differ among viruses a  
Accessibility : Keyboard Navigation

**5)** Studies of the immune response to an infection caused by microorganisms would be performed by a/an \_\_\_\_\_\_\_.

A) hypersensitivity specialist   
 B) epidemiologist  
 C) immunologist  
 D) geomicrobiologist

**Question Details**Learning Outcome : 01.02 Identify multiple professions using microbiology.  
ASM Topic : Module 05 Systems  
ASM Objective : 05.04 Microorganisms, cellular and viral, can interact with both human and nonhuman h  
Bloom's : 1. Remember  
Section : 01.01  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**6)** Which of the following pairs of career descriptions and work tasks is not correctly matched?

A) Industrial microbiologist -- manipulate bacterial strains to be less pathogenic   
 B) Agricultural microbiologist -- identify bacterial causes of crop disease  
 C) Public health microbiologist -- track the incidence of AIDS in a population  
 D) Medical microbiologist -- identify the cause of a bladder infection at a hospital lab

**Question Details**Learning Outcome : 01.02 Identify multiple professions using microbiology.  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 06.03 Humans utilize and harness microorganisms and their products.  
Bloom's : 1. Remember  
Section : 01.01  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**7)** A scientist who studies the influence of microbes in the formation of caves is called a/an \_\_\_\_\_\_.

A) geomicrobiologist   
 B) astrobiologist  
 C) epidemiologist  
 D) immunologist

**Question Details**Learning Outcome : 01.02 Identify multiple professions using microbiology.  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 06.01 Microbes are essential for life as we know it and the processes that support li  
Bloom's : 1. Remember  
Section : 01.01  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**8)** Astrobiology is considered a sub-discipline of microbiology because \_\_\_\_\_\_\_.

A) life elsewhere in the universe is likely to be microbial   
 B) microbes are known to exist on other planets  
 C) all extraterrestrials known are microbial  
 D) only microbes can reproduce under the extreme conditions in outer space

**Question Details**Learning Outcome : 01.02 Identify multiple professions using microbiology.  
ASM Topic : Module 01 Evolution  
ASM Topic : Module 05 Systems  
ASM Objective : 05.01 Microorganisms are ubiquitous and live in diverse and dynamic ecosystems.  
Bloom's : 3. Apply  
Section : 01.01  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**9)** Which of the following does not indicate microbe involvement in energy and nutrient flow?

A) Thermal hot springs warmed by heat from earth's interior   
 B) Formation of greenhouse gases, CO 2 and methane  
 C) Digestion of complex carbohydrates in animal diets  
 D) Decomposition of dead matter and wastes

**Question Details**Learning Outcome : 01.03 Describe the role and impact of microbes on the earth.  
ASM Topic : Module 05 Systems  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 05.01 Microorganisms are ubiquitous and live in diverse and dynamic ecosystems.  
ASM Objective : 06.01 Microbes are essential for life as we know it and the processes that support li  
Bloom's : 2. Understand  
Section : 01.02  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**10)** The microorganisms that recycle nutrients by breaking down dead matter and wastes are called \_\_\_\_\_\_.

A) decomposers   
 B) prokaryotes  
 C) pathogens  
 D) eukaryotes  
 E) fermenters

**Question Details**Learning Outcome : 01.03 Describe the role and impact of microbes on the earth.  
ASM Topic : Module 03 Metabolic Pathways  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 03.01 Bacteria and Archaea exhibit extensive, and often unique, metabolic diversity (  
ASM Objective : 06.01 Microbes are essential for life as we know it and the processes that support li  
Bloom's : 1. Remember  
Section : 01.02  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**11)** The majority of oxygen in earth's atmosphere is a product of photosynthesis by \_\_\_\_\_\_.

A) microorganisms   
 B) rain forests  
 C) agricultural lands  
 D) green plants

**Question Details**Learning Outcome : 01.03 Describe the role and impact of microbes on the earth.  
ASM Topic : Module 05 Systems  
ASM Objective : 05.01 Microorganisms are ubiquitous and live in diverse and dynamic ecosystems.  
ASM Objective : 06.01 Microbes are essential for life as we know it and the processes that support li  
Bloom's : 1. Remember  
Section : 01.02  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**12)** The three cell types discussed, eukaryotes, archaea, and bacteria, all derived from \_\_\_\_\_\_.

A) a common ancestral cell   
 B) photosynthetic bacteria  
 C) archaea  
 D) cells with a true nucleus

**Question Details**Learning Outcome : 01.04 Explain the theory of evolution and why it is called a theory.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.01 Cells, organelles (e.g., mitochondria and chloroplasts) and all major metabolic  
Bloom's : 2. Understand  
Section : 01.02  
Topic : Cellular Organization  
Accessibility : Keyboard Navigation

**13)** The first cells appeared about \_\_\_\_\_ billion years ago.

A) 5   
 B) 4  
 C) 3.5  
 D) 2  
 E) 1

**Question Details**Learning Outcome : 01.04 Explain the theory of evolution and why it is called a theory.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.01 Cells, organelles (e.g., mitochondria and chloroplasts) and all major metabolic  
Bloom's : 1. Remember  
Section : 01.02  
Topic : Cellular Organization  
Accessibility : Keyboard Navigation

**14)** Which area of biology states that living things undergo gradual structural and functional changes over long periods of time?

A) Morphology   
 B) Phylogeny  
 C) Evolution  
 D) Genetics  
 E) Transformation

**Question Details**Learning Outcome : 01.04 Explain the theory of evolution and why it is called a theory.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.02  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**15)** When humans manipulate the genes of microorganisms, the process is called \_\_\_\_\_\_.

A) bioremediation   
 B) genetic engineering  
 C) epidemiology  
 D) immunology  
 E) taxonomy

**Question Details**Learning Outcome : 01.05 Explain one old way and one new way that humans manipulate organisms for the  
ASM Topic : Module 04 Information Flow  
ASM Topic : Module 05 Systems  
ASM Objective : 04.05 Cell genomes can be manipulated to alter cell function.  
ASM Objective : 06.03 Humans utilize and harness microorganisms and their products.  
Bloom's : 1. Remember  
Section : 01.03  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**16)** Which activity is an example of biotechnology?

A) Bacteria in the soil secreting an antibiotic to kill competitors   
 B) A microbiologist using the microscope to view bacteria  
 C) Egyptians using moldy bread on wounds  
 D) *Escherichia coli* producing human insulin  
 E) Public health officials monitoring diseases in a community

**Question Details**Learning Outcome : 01.05 Explain one old way and one new way that humans manipulate organisms for the  
ASM Topic : Module 04 Information Flow  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 06.03 Humans utilize and harness microorganisms and their products.  
Bloom's : 2. Understand  
Section : 01.03  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**17)** Which of the following is a traditional human use of microorganisms?

A) Baking bread   
 B) Treating water and sewage  
 C) Mass-producing antibiotics  
 D) Cleaning up oil spills

**Question Details**Learning Outcome : 01.05 Explain one old way and one new way that humans manipulate organisms for the  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 06.03 Humans utilize and harness microorganisms and their products.  
Bloom's : 2. Understand  
Section : 01.03  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**18)** Using microbes to detoxify a site contaminated with heavy metals is an example of \_\_\_\_\_\_.

A) biotechnology   
 B) bioremediation  
 C) decomposition  
 D) immunology  
 E) epidemiology

**Question Details**Learning Outcome : 01.05 Explain one old way and one new way that humans manipulate organisms for the  
ASM Topic : Module 06 Impact of Microorganisms  
ASM Objective : 06.03 Humans utilize and harness microorganisms and their products.  
Bloom's : 1. Remember  
Section : 01.03  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**19)** Disease-causing microorganisms are called \_\_\_\_\_\_.

A) decomposers   
 B) bacteria  
 C) pathogens  
 D) eukaryotes  
 E) fermenters

**Question Details**Learning Outcome : 01.06 Summarize the relative burden of human disease caused by microbes, emphasizi  
ASM Topic : Module 05 Systems  
ASM Objective : 05.04 Microorganisms, cellular and viral, can interact with both human and nonhuman h  
Bloom's : 1. Remember  
Section : 01.04  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**20)** The number one worldwide infectious diseases are \_\_\_\_\_\_.

A) AIDS-related diseases   
 B) diarrheal diseases  
 C) malaria and other protozoan diseases  
 D) measles and other rash diseases  
 E) respiratory diseases

**Question Details**Learning Outcome : 01.06 Summarize the relative burden of human disease caused by microbes, emphasizi  
ASM Topic : Module 05 Systems  
ASM Objective : 05.04 Microorganisms, cellular and viral, can interact with both human and nonhuman h  
Bloom's : 3. Apply  
Section : 01.04  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**21)** The incidence of deaths from communicable disease is \_\_\_\_\_\_ in the United States compared to the entire world.

A) less   
 B) greater  
 C) about the same

**Question Details**Learning Outcome : 01.06 Summarize the relative burden of human disease caused by microbes, emphasizi  
ASM Topic : Module 05 Systems  
ASM Objective : 05.04 Microorganisms, cellular and viral, can interact with both human and nonhuman h  
Bloom's : 2. Understand  
Section : 01.04  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**22)** In which way are bacteria and eukaryotes the same?

A) Contain membrane-bound organelles   
 B) Possess a cell membrane  
 C) Contain a nucleus to hold DNA  
 D) Always have a cell wall for rigidity

**Question Details**Learning Outcome : 01.07 Differentiate among bacteria, archaea, and eukaryotic microorganisms.  
ASM Topic : Module 02 Structure and Function  
ASM Objective : 02.02 Bacteria have unique cell structures that can be targets for antibiotics, immun  
Bloom's : 2. Understand  
Section : 01.05  
Topic : Cellular Organization  
Accessibility : Keyboard Navigation

**23)** In which way are archaea and eukaryotesthe same?

A) Contain membrane-bound organelles   
 B) Have similar ssu rRNA sequences  
 C) Contain mitochondria for energy production  
 D) Possess RNA instead of DNA

**Question Details**Learning Outcome : 01.07 Differentiate among bacteria, archaea, and eukaryotic microorganisms.  
ASM Topic : Module 02 Structure and Function  
ASM Objective : 02.02 Bacteria have unique cell structures that can be targets for antibiotics, immun  
Bloom's : 2. Understand  
Section : 01.05  
Topic : Cellular Organization  
Accessibility : Keyboard Navigation

**24)** Which of the following is a unique characteristic of viruses that distinguishes them from the other major groups of microorganisms?

A) Cause human disease   
 B) Lack a nucleus  
 C) Cannot be seen without a microscope  
 D) Contain genetic material  
 E) Lack cell structure

**Question Details**Learning Outcome : 01.08 Identify two types of acellular microorganisms.  
ASM Topic : Module 02 Structure and Function  
ASM Objective : 04.04 The synthesis of viral genetic material and proteins is dependent on host cells  
Bloom's : 2. Understand  
Section : 01.05  
Topic : Cellular Organization  
Accessibility : Keyboard Navigation

**25)** Which group of microorganisms is composed only of hereditary material wrapped in a protein covering?

A) Viruses   
 B) Bacteria  
 C) Parasites  
 D) Fungi  
 E) Yeasts

**Question Details**Learning Outcome : 01.08 Identify two types of acellular microorganisms.  
ASM Topic : Module 02 Structure and Function  
ASM Objective : 05.04 Microorganisms, cellular and viral, can interact with both human and nonhuman h  
Bloom's : 1. Remember  
Section : 01.05  
Topic : Cellular Organization  
Accessibility : Keyboard Navigation

**26)** Eukaryotic cells are larger than bacterial or archaeal cells; allcells are larger than macromolecules. Where do viruses fit on this scale?

A) Viruses are larger than eukaryotic cells.   
 B) Viruses are smaller than eukaryotic cells, but larger than bacterial or archaeal cells.  
 C) Viruses are smaller than bacterial or archaeal cells, but larger than macromolecules.  
 D) Viruses are smaller than macromolecules.

**Question Details**Learning Outcome : 01.09 Compare and contrast the relative sizes of the different microbes.  
Learning Outcome : 01.08 Identify two types of acellular microorganisms.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 3. Apply  
Section : 01.05  
Topic : Cellular Organization  
ASM Objective : 02.01 The structure and function of microorganisms have been revealed by the use of m  
Accessibility : Keyboard Navigation

**27)** In general, eukaryotic cells are about \_\_\_\_\_\_ times larger than bacterial or archaeal cells.

A) 2   
 B) 10  
 C) 50  
 D) 1000

**Question Details**Learning Outcome : 01.09 Compare and contrast the relative sizes of the different microbes.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 1. Remember  
Section : 01.05  
Topic : Cellular Organization  
ASM Objective : 02.01 The structure and function of microorganisms have been revealed by the use of m  
Accessibility : Keyboard Navigation

**28)** Archaealcells are about \_\_\_\_\_\_ bacterial cells.

A) the same size as   
 B) ten times larger than  
 C) ten times smaller than

**Question Details**Learning Outcome : 01.09 Compare and contrast the relative sizes of the different microbes.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 2. Understand  
Section : 01.05  
Topic : Cellular Organization  
ASM Objective : 02.01 The structure and function of microorganisms have been revealed by the use of m  
Accessibility : Keyboard Navigation

**29)** Which of the following historical microbiologists is incorrectly paired with his contribution to the science?

A) Francesco Redi: tested spontaneous generation with meat exposed to the air or covered with cloth   
 B) Antonie van Leeuwenhoek:made and used quality magnifying lenses to observe and record microorganisms  
 C) Louis Pasteur: demonstrated that anthrax was caused by a bacterium  
 D) Joseph Lister: promoted disinfecting hands and air prior to surgery

**Question Details**Learning Outcome : 01.10 Make a time line of the development of microbiology from the 1600s to today.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 3. Apply  
Section : 01.06  
Topic : History of Microbiology  
ASM Objective : 02.01 The structure and function of microorganisms have been revealed by the use of m  
Accessibility : Keyboard Navigation

**30)** In the experiments constructed by Pasteur to disprove spontaneous generation, swan-necked flasks were used. Why was this shape of flask used in this experiment?

A) The glass necks needed to be open to the air, yet constructed so that bacteria would settle in the lowest part of the neck.   
 B) These flask shapes were the easiest and cheapest to produce.  
 C) The shape of the glass neck allowed the bacteria into the flask and then into the media, but air could not enter.  
 D) Because the glass necks were stretched out, the heat used to sterilize the medium inside of the flask could not kill the bacteria in the neck.

**Question Details**Learning Outcome : 01.10 Make a time line of the development of microbiology from the 1600s to today.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01a Ability to apply the process of science: Demonstrate an ability to formulate h  
Bloom's : 2. Understand  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**31)** Koch's postulates are criteria used to establish that \_\_\_\_\_\_.

A) microbes are found on dust particles   
 B) a specific microbe is the cause of a specific disease  
 C) life forms can only arise from preexisting life forms  
 D) a specific microbe should be classified in a specific kingdom  
 E) microbes can be used to clean up toxic spills

**Question Details**Learning Outcome : 01.10 Make a time line of the development of microbiology from the 1600s to today.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01b Ability to apply the process of science: Analyze and interpret results from a  
Bloom's : 1. Remember  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**32)** Which of the following is NOT a recent discovery that has had a huge impact on the understanding of microbiology?

A) Restriction enzymes   
 B) PCR technique  
 C) Human microbiome project  
 D) Small RNAs  
 E) All are significant discoveries.

**Question Details**Learning Outcome : 01.11 List some recent microbiological discoveries of great impact.  
ASM Topic : Module 05 Systems  
ASM Objective : 06.03 Humans utilize and harness microorganisms and their products.  
ASM Objective : 06.04 Because the true diversity of microbial life is largely unknown, its effects an  
Bloom's : 1. Remember  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**33)** The sum total of all the microbes in a certain environment is termed the \_\_\_\_\_\_.

A) microbiome   
 B) biofilm  
 C) microbial niche  
 D) domain  
 E) phylogeny

**Question Details**Learning Outcome : 01.11 List some recent microbiological discoveries of great impact.  
ASM Topic : Module 05 Systems  
ASM Objective : 05.01 Microorganisms are ubiquitous and live in diverse and dynamic ecosystems.  
Bloom's : 1. Remember  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**34)** Which of the following is not a process in the scientific method?

A) Belief in a preconceived idea   
 B) Formulation ofa hypothesis  
 C) Systematic observation  
 D) Laboratory experimentation  
 E) Development of a theory

**Question Details**Learning Outcome : 01.12 Explain what is important about the scientific method.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01a Ability to apply the process of science: Demonstrate an ability to formulate h  
Bloom's : 2. Understand  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**35)** Experimentation \_\_\_\_\_\_\_.

A) is designed to refute an hypothesis   
 B) is designed to support an hypothesis  
 C) provides a means to gather subjective data  
 D) provides a means to gather objective data  
 E) is the first step in the scientific method

**Question Details**Learning Outcome : 01.12 Explain what is important about the scientific method.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01a Ability to apply the process of science: Demonstrate an ability to formulate h  
Bloom's : 2. Understand  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**36)** The scientific method includes all of the following except \_\_\_\_\_\_.

A) hypothesis   
 B) experimentation  
 C) observation  
 D) publication

**Question Details**Learning Outcome : 01.12 Explain what is important about the scientific method.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01a Ability to apply the process of science: Demonstrate an ability to formulate h  
Bloom's : 2. Understand  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**37)** Caring for patients infected with a new virus requires safety precautions for medical personnel. Choosing appropriate procedures is an example of a/an \_\_\_\_\_\_ process.

A) deductive   
 B) inductive  
 C) hypothetical  
 D) pathogenic

**Question Details**Learning Outcome : 01.12 Explain what is important about the scientific method.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01b Ability to apply the process of science: Analyze and interpret results from a  
Bloom's : 3. Apply  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**38)** Sterile is best described as \_\_\_\_\_\_.

A) pathogen-free   
 B) absence of spores  
 C) absence of any life forms and viral particles  
 D) pasteurized  
 E) homogenized

**Question Details**Learning Outcome : 01.10 Make a time line of the development of microbiology from the 1600s to today.  
ASM Topic : Module 05 Systems  
ASM Objective : 05.01 Microorganisms are ubiquitous and live in diverse and dynamic ecosystems.  
Bloom's : 1. Remember  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**39)** Taxonomy does not involve \_\_\_\_\_\_.

A) nomenclature   
 B) classification  
 C) identification  
 D) a common name

**Question Details**Learning Outcome : 01.13 Differentiate among the terms nomenclature, taxonomy, and classification.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**40)** Which scientific field is involved in the identification, classification, and naming of organisms?

A) Nomenclature   
 B) Taxonomy  
 C) Phylogeny  
 D) Pathology  
 E) Epidemiology

**Question Details**Learning Outcome : 01.13 Differentiate among the terms nomenclature, taxonomy, and classification.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**41)** The orderly arrangement of organisms into a hierarchy of taxa is called \_\_\_\_\_\_.

A) classification   
 B) identification  
 C) nomenclature  
 D) experimentation  
 E) biotechnology

**Question Details**Learning Outcome : 01.13 Differentiate among the terms nomenclature, taxonomy, and classification.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**42)** Which of the following is a taxon that contains all the other taxa listed?

A) Species   
 B) Phylum  
 C) Kingdom  
 D) Genus  
 E) Family

**Question Details**Learning Outcome : 01.14 Create a mnemonic device for remembering the taxonomic categories.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**43)** The smallest and most significant taxon is a \_\_\_\_\_\_.

A) genus   
 B) species  
 C) kingdom  
 D) family  
 E) phylum

**Question Details**Learning Outcome : 01.14 Create a mnemonic device for remembering the taxonomic categories.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.04 The traditional concept of species is not readily applicable to microbes due to  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**44)** Select the correct descending taxonomic hierarchy (left to right).

A) Family, order, class   
 B) Family, genus, species  
 C) Genus, species, family  
 D) Class, phylum, order  
 E) Kingdom, domain, phylum

**Question Details**Learning Outcome : 01.14 Create a mnemonic device for remembering the taxonomic categories.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 2. Understand  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**45)** A recently-developed mnemonic for remembering the taxonomic levels from Domain to Species is "Dumb Kids Prefer Candy Over Fancy Green Salad." The word "candy" here is a reminder of the taxonomic level of \_\_\_\_\_\_.

A) class   
 B) category  
 C) chain  
 D) colony  
 E) culture

**Question Details**Learning Outcome : 01.14 Create a mnemonic device for remembering the taxonomic categories.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 3. Apply  
Section : 01.06  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**46)** Which of the following is a scientific name?

A) Gram-positive streptococcus   
 B) *Streptococcus pyogenes*  
 C) Anthrax  
 D) Streptobacilli

**Question Details**Learning Outcome : 01.15 Correctly write the binomial name for a microorganism.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 2. Understand  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**47)** When assigning a scientific name to an organism, \_\_\_\_\_\_\_.

A) the species name is capitalized   
 B) the species name is placed first  
 C) the species name can be abbreviated  
 D) both genus and species names are capitalized  
 E) both genus and species names are italicized or underlined

**Question Details**Learning Outcome : 01.15 Correctly write the binomial name for a microorganism.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**48)** Which scientific name is written correctly?

A) Staphylococcus aureus   
 B) staphylococcus aureus  
 C) Staphylococcus Aureus  
 D) *Staphylococcus aureus*  
 E) S. aureus

**Question Details**Learning Outcome : 01.15 Correctly write the binomial name for a microorganism.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 2. Understand  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**49)** A diagram of the three domains (Bacteria, Archaea, Eukarya) proceeding from the Last CommonAncestor would show Archaea \_\_\_\_\_\_\_.

A) as the original cells from which the others derived   
 B) branching off the Domain Eukarya  
 C) branching off the Domain Bacteria

**Question Details**Learning Outcome : 01.16 Draw a diagram of the three major domains.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.01 Cells, organelles (e.g., mitochondria and chloroplasts) and all major metabolic  
Bloom's : 3. Apply  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**50)** Analysis of the small subunit rRNAs from all organisms in the three current domains suggests that \_\_\_\_\_\_\_.

A) the eukaryotes arose from prokaryotes   
 B) the Archaea are more closely related to bacteria than eukaryotes  
 C) all modern and extinct organisms on earth arose from a common ancestor  
 D) bacteria, archaea, and eukaryotes are not related

**Question Details**Learning Outcome : 01.16 Draw a diagram of the three major domains.  
Learning Outcome : 01.17 Explain the difference between traditional and molecular approaches to taxon  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.01 Cells, organelles (e.g., mitochondria and chloroplasts) and all major metabolic  
Bloom's : 2. Understand  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**51)** The study of evolutionary relationships among organisms is called \_\_\_\_\_\_.

A) biotechnology   
 B) genetics  
 C) recombinant DNA  
 D) phylogeny  
 E) taxonomy

**Question Details**Learning Outcome : 01.04 Explain the theory of evolution and why it is called a theory.  
Learning Outcome : 01.17 Explain the difference between traditional and molecular approaches to taxon  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.02  
Section : 01.07  
Topic : History of Microbiology  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**52)** A scientist studying the sequence of nucleotides in the rRNA of a bacterial species is working on \_\_\_\_\_\_\_.

A) determining evolutionary relatedness   
 B) bioremediation  
 C) recombinant DNA  
 D) nomenclature  
 E) determining if that species is the cause of a new disease

**Question Details**Learning Outcome : 01.17 Explain the difference between traditional and molecular approaches to taxon  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 3. Apply  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**53)** Trees of life that illustrate the phylogenetic relationships of all organisms were traditionally based on \_\_\_\_\_\_; newer methods for determining phylogeny rely on \_\_\_\_\_\_.

A) morphology; nucleic acid sequences   
 B) nucleic acid sequences; morphology  
 C) morphology; virology  
 D) morphology; nutritional requirements  
 E) nucleic acid sequences; microbiomes

**Question Details**Learning Outcome : 01.17 Explain the difference between traditional and molecular approaches to taxon  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 2. Understand  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**54)** A hypothesis must be tested many times before it can be considered a theory.

⊚ true  
 ⊚ false

**Question Details**Learning Outcome : 01.12 Explain what is important about the scientific method.  
Learning Outcome : 01.04 Explain the theory of evolution and why it is called a theory.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01a Ability to apply the process of science: Demonstrate an ability to formulate h  
Bloom's : 1. Remember  
Section : 01.02  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**55)** Many chronic medical conditions have been found to be associated with microbial agents.

⊚ true  
 ⊚ false

**Question Details**Learning Outcome : 01.06 Summarize the relative burden of human disease caused by microbes, emphasizi  
ASM Topic : Module 05 Systems  
ASM Objective : 05.04 Microorganisms, cellular and viral, can interact with both human and nonhuman h  
Bloom's : 1. Remember  
Section : 01.04  
Topic : History of Microbiology  
Topic : Microbial Roles  
Accessibility : Keyboard Navigation

**56)** All bacteria and archaea are microorganisms, but only some eukaryotes are microorganisms.

⊚ true  
 ⊚ false

**Question Details**Learning Outcome : 01.07 Differentiate among bacteria, archaea, and eukaryotic microorganisms.  
ASM Topic : Module 02 Structure and Function  
Bloom's : 2. Understand  
Section : 01.05  
Topic : Cellular Organization  
ASM Objective : 02.01 The structure and function of microorganisms have been revealed by the use of m  
Accessibility : Keyboard Navigation

**57)** The scientific method involves formulating a tentative explanation, called the hypothesis, to account for what has been observed or measured.

⊚ true  
 ⊚ false

**Question Details**Learning Outcome : 01.12 Explain what is important about the scientific method.  
ASM Topic : Module 07 Scientific Thinking  
ASM Objective : 07.01a Ability to apply the process of science: Demonstrate an ability to formulate h  
Bloom's : 1. Remember  
Section : 01.06  
Topic : History of Microbiology  
Accessibility : Keyboard Navigation

**58)** Members of the same species share many more characteristics compared to those shared by members of the same kingdom.

⊚ true  
 ⊚ false

**Question Details**Learning Outcome : 01.13 Differentiate among the terms nomenclature, taxonomy, and classification.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 2. Understand  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**59)** The names of the three proposed domains are: Bacteria, Protista, and Eukarya.

⊚ true  
 ⊚ false

**Question Details**Learning Outcome : 01.16 Draw a diagram of the three major domains.  
ASM Topic : Module 01 Evolution  
ASM Objective : 01.05 The evolutionary relatedness of organisms is best reflected in phylogenetic tre  
Bloom's : 1. Remember  
Section : 01.07  
Topic : Taxonomy of Microorganisms  
Accessibility : Keyboard Navigation

**Answer Key**Test name: ch1

1) D

2) A

3) D

4) A

5) C

6) A

7) A

8) A

9) A

10) A

11) A

12) A

13) B

14) C

15) B

16) D

17) A

18) B

19) C

20) E

21) A

22) B

23) B

24) E

25) A

26) C

27) B

28) A

29) C

30) A

31) B

32) E

33) A

34) A

35) D

36) D

37) A

38) C

39) D

40) B

41) A

42) C

43) B

44) B

45) A

46) B

47) E

48) D

49) B

50) C

51) D

52) A

53) A

54) TRUE

55) TRUE

56) TRUE

57) TRUE

58) TRUE

59) FALSE