Microbiology: Basic & Clinical Principles, 2e **(Norman-McKay)**
Chapter 1 Introduction to Microbiology

1.1 Multiple Choice Questions

1) Which of the following is **not** a microorganism?
A) bacteria
B) archaea
C) fungi
D) mosquito
E) helminth
Answer: D
Chapter/Section: 1.1
Learning Outcome: 1.1
Bloom's Taxonomy: 1-2: Remembering/Understanding

2) When do opportunistic pathogens tend to cause disease?
A) when the host is weakened
B) when the host has recently traveled to a remote area
C) when the host is young
D) when the host is pregnant
E) when the host didn't wash with soap
Answer: A
Chapter/Section: 1.1
Learning Outcome: 1.2
Bloom's Taxonomy: 1-2: Remembering/Understanding

3) Which of the following could be used as evidence for spontaneous generation?
A) Uncovered meat will give rise to maggots.
B) The meat in gauze-covered jars will not give rise to maggots.
C) The broth in Pasteur's S-necked flasks did not spoil.
D) Tilting Pasteur's S-necked flasks did spoil the broth.
E) Flies lay eggs that develop into maggots.
Answer: A
Chapter/Section: 1.1
Learning Outcome: 1.3
Bloom's Taxonomy: 1-2: Remembering/Understanding

4) _____ showed that biogenesis is responsible for the propagation of life.
A) Louis Pasteur
B) Robert Hooke
C) Antonie van Leeuwenhoek
D) Joseph Lister
E) Carl Linnaeus
Answer: A
Chapter/Section: 1.1
Learning Outcome: 1.3
Bloom's Taxonomy: 1-2: Remembering/Understanding

5) Robert Koch helped establish the germ theory of disease by discovering that anthrax was caused by a bacterial microorganism. After he isolated and purified the same bacteria from several diseased animals, what would be the next step in order to show that this bacteria caused anthrax?
A) perform physiological testing
B) introduce the bacteria into a new mouse to see if it established the same infection
C) visualize the bacteria with an electron microscope
D) culture the bacteria on Petri dishes
E) find out if antibiotics treat the diseased animals
Answer: B
Chapter/Section: 1.1
Learning Outcome: 1.4
Bloom's Taxonomy: 1-2: Remembering/Understanding

6) How many principles are there in Koch's postulates of disease?
A) 1
B) 2
C) 3
D) 4
E) 5
Answer: D
Chapter/Section: 1.1
Learning Outcome: 1.4
Bloom's Taxonomy: 1-2: Remembering/Understanding

7) Aseptic technique can be used for all of the following **except**
A) preventing healthcare-acquired infections.
B) safely studying microbes in the laboratory.
C) keeping samples pure for studying.
D) replacing gloves instead of hand washing when time is short.
E) limiting the spread of diseases.
Answer: D
Chapter/Section: 1.1
Learning Outcome: 1.5
Bloom's Taxonomy: 1-2: Remembering/Understanding

8) Which of the following individuals does **not** correctly match with their contribution to microbiology?
A) Ignaz Semmelweis: First developed aseptic techniques to decrease mortality rates from childbed fever
B) Joseph Lister: Developed the first anesthetic solution for use in surgeries
C) Florence Nightingale: Established the use of aseptic techniques in nursing practices
D) Robert Koch: Developed criteria for determining the causative agent of an infectious disease
E) Louis Pasteur: Showed that biogenesis is responsible for the propagation of life
Answer: B
Chapter/Section: 1.1
Learning Outcome: 1.6
Global LO: G2
Bloom's Taxonomy: 3-4: Applying/Analyzing

9) The scientific method starts with a(n)
A) hypothesis.
B) prediction.
C) observation.
D) question.
E) proposal.
Answer: D
Chapter/Section: 1.1
Learning Outcome: 1.7
Global LO: G1
Bloom's Taxonomy: 1-2: Remembering/Understanding

10) Inference-observation confusion occurs when someone
A) jumps to a conclusion.
B) cannot understand your accent.
C) remembers events wrong.
D) lies about what happened.
E) incorrectly assesses a patient.
Answer: A
Chapter/Section: 1.1
Learning Outcome: 1.7
Global LO: G1 | G2
Bloom's Taxonomy: 3-4: Applying/Analyzing

11) _____ predict what happens, while _____ explain how and why something occurs.
A) Theories; laws
B) Hypotheses; conclusions
C) Laws; theories
D) Observations; hypotheses
E) Observations; conclusions
Answer: C
Chapter/Section: 1.1
Learning Outcome: 1.7
Global LO: G1
Bloom's Taxonomy: 1-2: Remembering/Understanding

12) Which of the following is the correct way to type a scientific name?
A) *escherichia coli*
B) Escherichia Coli
C) escherichia coli
D) *Escherichia coli*
E) *Escherichia coli*
Answer: D
Chapter/Section: 1.2
Learning Outcome: 1.10
Bloom's Taxonomy: 1-2: Remembering/Understanding

13) What is the order of the taxonomic hierarchy from least specific to most specific?
A) species, genus, order, family, class, phylum, kingdom, domain
B) domain, kingdom, phylum, class, order, family, genus, species
C) class, order, phylum, kingdom, domain, genus, family, species
D) domain, phylum, order, kingdom, class, family, genus, species
E) domain, order, class, kingdom, phylum, species, family, genus
Answer: B
Chapter/Section: 1.2
Learning Outcome: 1.8
Bloom's Taxonomy: 1-2: Remembering/Understanding

14) All of the following are reasons to classify a new strain of bacteria **except**
A) mutations.
B) gene transfers.
C) take up genetic material from their environment.
D) 50% different genetic material.
E) genetic variant.
Answer: D
Chapter/Section: 1.2
Learning Outcome: 1.9
Bloom's Taxonomy: 1-2: Remembering/Understanding

15) Why can't prokaryotic species be defined as a group of similar organisms that could sexually reproduce together?
A) Bacteria reproduce asexually.
B) Bacteria are all too different to be considered similar.
C) The mating rituals of bacteria have not been studied enough.
D) They can be.
E) We can't see them in enough detail to tell how similar they really are yet.
Answer: A
Chapter/Section: 1.2
Learning Outcome: 1.8 | 1.10
ASM LO: 1.4
Bloom's Taxonomy: 1-2: Remembering/Understanding

16) Normal microbiota are responsible for all of the following **except**
A) training our immune system.
B) producing vitamins for us.
C) helping us digest foods.
D) inducing spontaneous mutations in our genome.
E) impacting our moods and brain functions.
Answer: D
Chapter/Section: 1.2
Learning Outcome: 1.12
ASM LO: 5.4
Bloom's Taxonomy: 1-2: Remembering/Understanding

17) Which of the following does **not** contribute to shifts in our normal microbiota?
A) hormonal changes
B) diet
C) age
D) proper hand-washing technique
E) our general environment
Answer: D
Chapter/Section: 1.2
Learning Outcome: 1.12
ASM LO: 5.4
Bloom's Taxonomy: 1-2: Remembering/Understanding

18) Microbes and humans have evolved a variety of _____ relationships, including _____ where microbes help the host.
A) commensal; mutualism
B) symbiotic; parasitism
C) symbiotic; commensalism
D) dynamic; commensalism
E) symbiotic; mutualism
Answer: E
Chapter/Section: 1.2
Learning Outcome: 1.11
ASM LO: 5.4
Bloom's Taxonomy: 1-2: Remembering/Understanding

19) Carriers of the sickle-cell gene
A) are more likely to die from a malaria infection.
B) are more susceptible to contracting malaria.
C) have a survival advantage in areas where malaria is common.
D) are often found in high concentrations in U.S. cities.
E) experience painful changes in nerve cell shape.
Answer: C
Chapter/Section: 1.2
Learning Outcome: 1.13
Bloom's Taxonomy: 1-2: Remembering/Understanding

20) Which of the following is **true** about bioremediation?
A) Bioremediation never harms the environment.
B) Bioremediation will use genetically-modified organisms to break down the chemicals found in the spill zone.
C) The Environmental Protection Agency documents a handful of chemical spills per year in the United States alone.
D) Antibiotics are used to seed the spill zone to prevent growth of unwanted microbial species.
E) Nitrogen, sulfur, phosphate, and sometimes iron supplements are added to the spill zone to encourage microbial growth.
Answer: E
Chapter/Section: 1.2
Learning Outcome: 1.15
ASM LO: 6.3
Bloom's Taxonomy: 1-2: Remembering/Understanding

21) All of the following are or can be produced by microbes **except**
A) food like chocolate.
B) drugs like penicillin.
C) consumer products like biodegradable plastics.
D) electronics like computer memory.
E) biofuels like diesel.
Answer: D
Chapter/Section: 1.2
Learning Outcome: 1.15
ASM LO: 6.3
Bloom's Taxonomy: 1-2: Remembering/Understanding

22) All of the following may involve biofilms **except**
A) kidney stones.
B) inner ear infections.
C) atherosclerosis.
D) endocarditis.
E) Influenza.
Answer: E
Chapter/Section: 1.2
Learning Outcome: 1.14
Global LO: G2
ASM LO: 5.2
Bloom's Taxonomy: 3-4: Applying/Analyzing

23) When _____ bacteria attach to a surface and begin to replicate, creating multiple layers, sticky communities called _____ may form.
A) planktonic; biofilms
B) pathogenic; quorums
C) plaque; microbiota
D) infectious; flora
E) matrix; cavities
Answer: A
Chapter/Section: 1.2
Learning Outcome: 1.14
ASM LO: 5.2
Bloom's Taxonomy: 1-2: Remembering/Understanding