Package Title: Test Bank
Course Title: Wessner2e
Chapter Number: 1

Question Type: Multiple Choice

1) Which of these is considered to be the smallest unit of life?

a) the nucleus
b) the mitochondrion
c) a plasmid
d) the cell
e) a prion

Answer: d

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

2) The study of microbiology includes all of the following EXCEPT _____ .

a) plants
b) viruses
c) bacteria
d) fungi
e) algae

Answer: a

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

3) What percent of the dry weight of the cell is composed of DNA?

a) 2 – 5
b) 12 -15
c) 25 - 30
d) 35 -40
e) 50 – 55

Answer: a

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

4) What are the three Domains of life?

a) Monera, Animals, and Plants
b) Bacteria, Archaea, and Eukarya
c) Prokaryote, Eukaryote, and Fungi
d) Animals, Plants, and Bacteria
e) Prokaryote, Eukaryote, Archaea

Answer: b

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

5) Which of the characteristics of life is not displayed by any individual organism?

a) metabolism
b) growth
c) reproduction
d) evolution
e) response
f) homeostasis

Answer: d
Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

6) Viruses are considered “nonliving” for all of the following reasons EXCEPT that they:

a) need a host cell for replication.
b) are metabolically inert.
c) possess DNA that can evolve.
d) do not maintain internal homeostasis.
e) are not responsive to environmental changes.

Answer: c

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

7) Which is a macromolecular difference between the Domains Bacteria and Archaea?

a) Archaea contain a nucleus and Bacteria do not.
b) Bacteria contain DNA and Archaea do not.
c) Bacteria contain a plasma membrane and Archaea do not.
d) Bacteria cell wall contains peptidoglycan and the Archaea cell wall does not.
e) Archaea contain multiple types of RNA polymerase and Bacteria has only one type.

Answer: d

Difficulty: Hard
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

8) The size and shapes of Archaean cells suggest relatedness to:

a) Bacteria
b) Prokaryotes
c) Eukaryotes
d) All other life forms
e) No other life forms; their sizes and shapes are unique

Answer: a

Difficulty: Medium

Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

9) Phosholipid structure in Archaean cells suggests relatedness to:

a) Bacteria
b) Prokaryotes
c) Eukaryotes
d) All other life forms
e) No other life forms; their structure is unique

Answer: e

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

10) Which molecular tool *most* assisted in providing a more reliable way to verify the assertions made by Woese et al in their 1990 paper on phylogeny?

a) Polymerase chain reaction
b) RNA to DNA conversion using reverse transcriptase
c) RNA sequencing
d) DNA sequencing
e) Protein sequencing

Answer: a

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

11) If *E. coli* DNA polymerase, not Taq polymerase were used in polymerase chain reaction assays to amplify SSUrRNA gene sequences, we would expect to see:

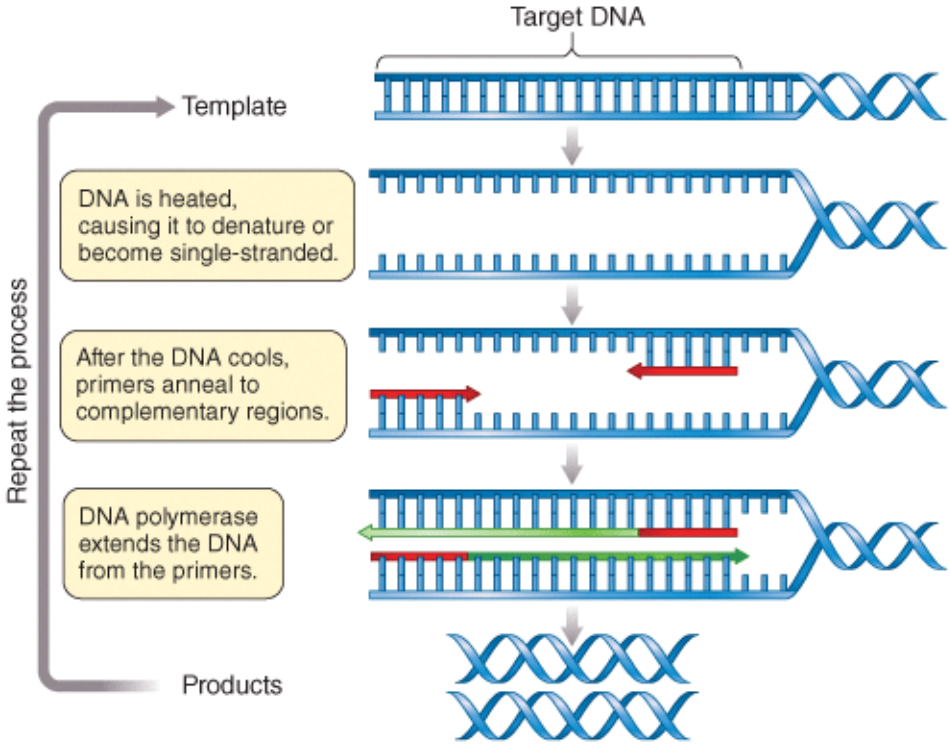
a) increased short fragment DNA sequences
b) decreased short fragment DNA sequences
c) the same number of short fragment DNA sequences
d) increasd long fragment DNA sequences
e) decreased long fragment DNA sequences

Answer: b

Difficulty: Medium

Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

12) Figure B1.1 represents an artist's attempt to illustrate the process of PCR. What is the *most* significant error you notice in this figure?




a) DNA strands are not fully denatured
b) Primers are not annealed
c) PCR products cannot separate from template DNA
d) Taq polymerase is not shown in the illustration
e) dNTPs are not shown in the illustration

Answer:a

Difficulty: Hard
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

13) Select the answer choice with the correct order in which these structures evolved in plant cells:

a) mitochondria, cell walls, chloroplasts
b) mitochondria, chloroplasts, cell walls
c) chloroplasts, mitochondria, cell walls

d) chloroplasts, cell walls, mitochondria
e) cell walls, mitochondria, chloroplasts

Answer: b

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

14) Approximately when did primitive cells first appear on Earth?

a) 1 billion years ago
b) 2 billion years ago
c) 2.5 billion years ago
d) 3 billion years ago
e) 3.8 billion years ago

Answer: e

Difficulty: Easy
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

15) Which of these are fossilized microbial mats containing photosynthetic bacteria?

a) Stromatolites
b) Biofilms
c) Resin
d) Cyanobacteria
e) Stalagmites

Answer: a

Difficulty: Easy
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

16) Which statement below is FALSE concerning the atmosphere of early earth?

a) The atmosphere was a reducing atmosphere.
b) Oxygen was present in very minute amounts.
c) Carbon dioxide was present in very minute amounts.
d) Hydrogen gas was present.

e) Nitrogen gas was present in very large amounts.

Answer: c

Difficulty: Easy
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

17) The discovery of ribozymes provides evidence that life on the early Earth may have been based on:

a) DNA.
b) proteins.
c) RNA.
d) lipids.
e) polysaccharides.

Answer: c

Difficulty: Easy
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

18) What is the Endosymbiotic Theory is used to explain?

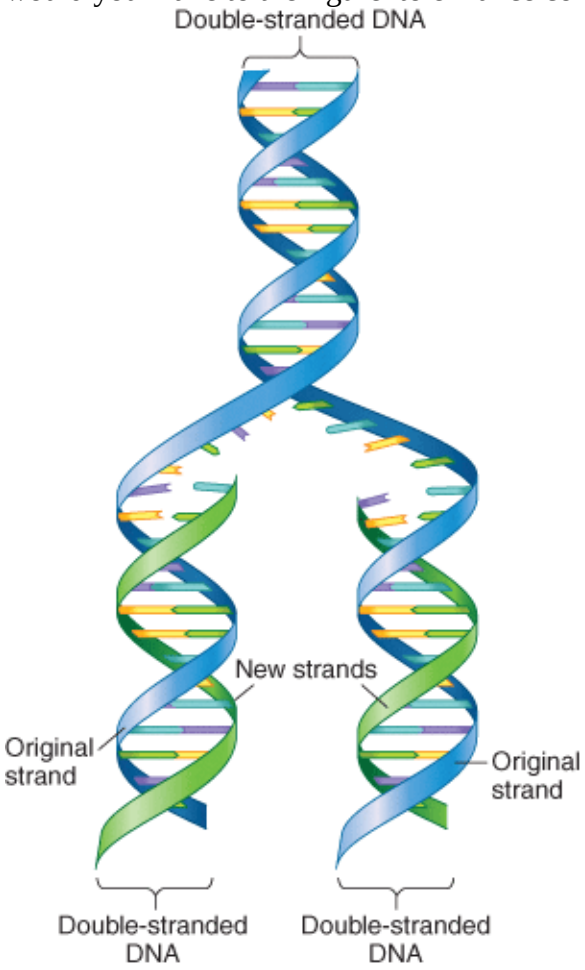
a) the rapid evolution of viruses
b) antiphagocytic abilities of parasitic protozoa
c) emergence of cell walls
d) presence of mitochondria in eukaryotes
e) development of the nucleus in eukaryotes

Answer: d

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

19) You are a scientific illustrator working on this figure. Your primary intention when revising this figure is to emphasize the concept of semi-concervative replication. What color changes

would you make to the figure  to enhance comprehension?




a) make all DNA strands blue in the figure
b) make the dsDNA a blue-green hybrid and each newly synthesized strand of the color that makes the new dsDNA blue-green hybrid in appearance too
c) change all DNA strands to be different colors
d) do not make any changes, semi-conservative replication is clearly conceptualized
e) all suggestions are equally informative

Answer: b

Difficulty: Hard
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

20) A restriction endonuclease cuts DNA at the sequence ACGT.  If we assume that all four bases are equally represented in DNA, what are the odds of this sequence occurring on a DNA strand?

a) Roughly every 100 base pairs
b) Roughly every 250 base pairs
c) Roughly every 1000 base pairs
d) Roughly every 10,000 base pairs
e) Roughly every 20,000 base pairs

Answer b

Difficulty: Hard
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

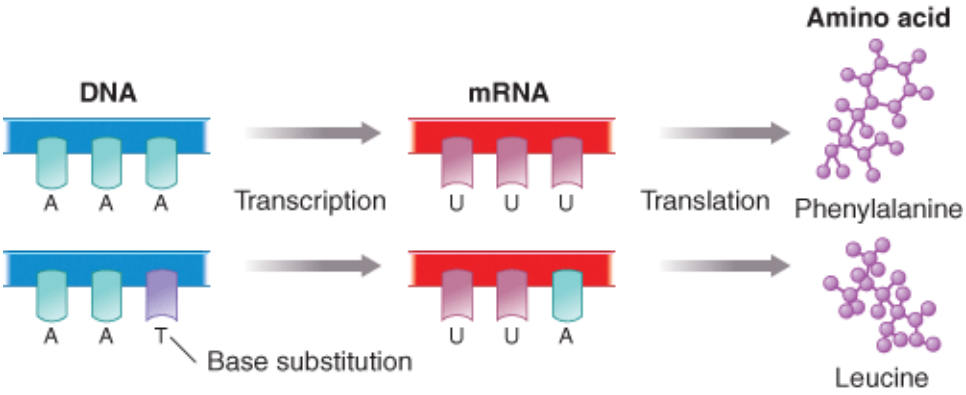
21) In which molecule is the occurence of mutation most likely to be detected and repaired?

a) Single stranded DNA
b) Single stranded RNA
c) Double stranded DNA
d) Protein
e) None of these is an information storage molecule

Answer: c

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

22) The figure shown here relates to the flow of information from DNA to RNA to protein. Select the correct alternative scenario(s) for insertion of leucine instead of phenylalanine during translation.




a) Error prone RNA polymerase creates a mutant mRNA from a correct DNA template
b) Mutated tRNA introduces leucine instead of phenylalanine against the correct mRNA sequence
c) Mutated ribosome creates a environment where mRNA-tRNA mismatches occur infrequently

d) Both a and b are possible correct scenarios
e) All of these possibilities could explain the translational error

Answer: d

Difficulty: Hard
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

23) Eukaryal life forms without mitochondria do exist. Which of the following do you think they are likely to be?

a) animals
b) terrestrial plants
c) oceanic giant kelps
d) single celled protists
e) all are equally plausible

Answer: d

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

24) When would you speculate that the extinction of most eukaryal life forms without mitochondria would have begun?

a) 3.5 billion ybp
b) 3 billion ybp
c) 2 billion ybp
d) 1 billion ybp
e) 500 million ybp

Answer: c

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

25) Which of these best describes horizontal gene transfer?

a) mitosis followed by cytokinesis
b) meiosis and subsequent formation of a zygote
c) transfer of genes from mother cell to daughter cell
d) DNA replication followed by crossing over
e) acquisition of genes from another organism in the same generation

Answer: e

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.
Section Reference: Section 1.2 Microbial genetics

26) Which of these gene expression errors will result in heritable genetic change?

a) DNA polymerase error introducing an incorrect base
b) RNA polymerase error creating a mutated mRNA
c) RNA polymerase error creating a mutated tRNA
d) RNA polymerase error creating a mutated rRNA
e) All will lead to heritable changes

Answer: a

Difficulty: Medium
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

27) Which is the correct distinction between a heterotroph and an autotroph?

a) An autotroph utilizes organic compounds as a carbon source and a heterotroph uses carbon dioxide as a carbon source.
b) An autotroph utilizes carbon dioxide as a carbon source and a heterotroph utilizes organic compounds as a carbon source.
c) An autotroph utilizes complex organic compounds as a carbon source and a heterotroph utilizes simple organic compounds as a carbon source.
d) An autotroph utilizes carbon dioxide as an energy source and a heterotroph utilizes organic compounds as an energy source.
e) an autotroph utilizes organic compounds as an energy source and a heterotroph utilizes carbon dioxide as an energy source .

Answer: b

Difficulty: Medium

Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

28) Which best describes a photoautotroph?

a) Utilizes sunlight for energy and organic molecules as a carbon source.
b) Utilizes sunlight as an energy source to fix carbon dioxide.
c) Emits light from the breakdown of organic carbon.
d) Emits light from the fixation of carbon dioxide.
e) Uses organic compounds as a source of carbon and energy.

Answer: b

Difficulty: Easy
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.
Section Reference: Section 1.3 Microbial metabolism and ecology

29) Which best describes the Cyanobacteria?

a) First prokaryote to contain mitochondria.
b) First appeared on earth about 3.5 billion years ago.
c) Carry out oxygenic photosynthesis.
d) Members of the Archaea domain.
e) A type of eukaryotic algae.

Answer: c

Difficulty: Medium
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

30) A chemoautotroph:

a) obtains carbon and energy from organic molecules.
b) obtains energy from the sun and carbon from organic molecules.
c) obtains energy from the sun and carbon from inorganic molecules.
d) obtains carbon and energy from inorganic molecules.
e) obtains energy from the sun and carbon from carbon dioxide only.

Answer: d

Difficulty: Medium

Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

31) What term applies to the oxidation of glucose to pyruvate for the generation of energy?

a) gluconeogenesis
b) Krebs cycle
c) lactate fermentation
d) pentose phosphate pathway
e) glycolysis

Answer: e

Difficulty: Easy
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

32) Which of these is required during aerobic respiration?

a) oxygen
b) glucose
c) nitrate
d) pyruvate
e) water

Answer: a

Difficulty: Medium
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

33) During nitrogen fixation, microorganisms convert:

a) nitrate to dinitrogen gas.
b) dinitrogen gas to ammonia.
c) ammonia to dinitrogen gas.
d) dinitrogen gas to nitrate.
e) ammonia to nitrate.

Answer: b

Difficulty: Medium
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

34) During ammonification, microorganisms convert:

a) Ammonia to mitrates
b) Amino acids to ammonia
c) Ammonia to dinitrogen gas
d) Dinitrogen gas to ammonia
e) None is a correct choice

Answer: b

Difficulty: Hard
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.

35) This early microbiology pioneer developed a set of criteria for linking a specific microorganism to a specific disease.

a) Louis Pasteur
b) Edward Jenner
c) Robert Koch
d) John Tyndall
e) Anton van Leeuwenhoek

Answer: c

Difficulty: Easy
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

36) This early microbiologist used a swan-necked flask to help disprove the Theory of Spontaneous Generation.

a) Louis Pasteur
b) Edward Jenner
c) Robert Koch
d) John Tyndall
e) Anton van Leeuwenhoek

Answer: a

Difficulty: Easy
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

37) Who was the first person to provide a written description of bacteria?

a) Louis Pasteur
b) Edward Jenner
c) Robert Koch
d) John Tyndall
e) Anton van Leeuwenhoek

Answer: e

Difficulty: Easy
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

38) Louis Pasteur's classic swan-necked flask experiment might not have disproved spontaneous generation if this microbial type was present:

a) aerobic microbes
b) anaerobic microbes
c) endospore forming microbes
d) viruses
e) none of these would have impated the results

Answer: c

Difficulty: Hard
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

39) Prior to World War II, the greatest cause of death during wartime has been:

a) trauma on the battlefield
b) starvation
c) dysentery
d) wound infection
e) microbial disease

Answer: e

Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

40) The development of which vaccine would most dramatically reduce death rates in sub-Saharan Africa?

a) Tuberculosis
b) HIV
c) Malaria
d) Cholera
e) Smallpox

Answer: c
Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

41) One limitation to the knowledge gained through "non-cultivation-based" genomic research is:

a) Phylogenetic comparisons cannot be made
b) Culture conditions for microbes can never be established
c) Information is insufficient to establish microbial identity
d) Genome size cannot be determined
e) None are valid limitations

Answer: d

Difficulty: Hard
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

42) The development of which vaccine would most dramatically reduce death rates in sub-Saharan Africa?

a) Tuberculosis
b) HIV
c) Malaria
d) Cholera

e) Smallpox

Answer: c
Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

Question Type: Multiple Select

43) Which of the characteristics of life are not displayed by individual single-celled organisms? Select all that apply)

a) metabolism
b) growth
c) reproduction
d) evolution
e) response
f) homeostasis

Answer: d, f

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

44) Endospores are structures possessing which of the characteristics of life? (Select all that apply)

a) metabolism
b) growth
c) reproduction
d) evolution
e) response
f) homeostasis

Answer: e

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

45) When *Dictyostelium discoideum* transitions from single cells to a multicellular form, which life characteristics are evident in the multicellular form? (Select all that apply)

a) metabolism
b) growth
c) reproduction
d) evolution
e) response
f) homeostasis

Answer: a, b, c, e, f

Difficulty: Hard
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

46) When *Dictyostelium discoideum* transitions from single cells to a multicellular form, which life characteristics are being recruited for the process to occur? (Select all that apply)

a) metabolism
b) growth
c) reproduction
d) evolution
e) response
f) homeostasis

Answer: a, b, c, e

Difficulty: Hard
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

47) Viruses may be considered non-living for all of the following reasons EXCEPT that they: (Select all that apply)

a) need a host cell for replication.
b) are metabolically inert.
c) possess DNA that can evolve.
d) do not maintain internal homeostasis.
e) possess receptors which facilitate entry into cells

Answer: a, c, d

Difficulty: Hard
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

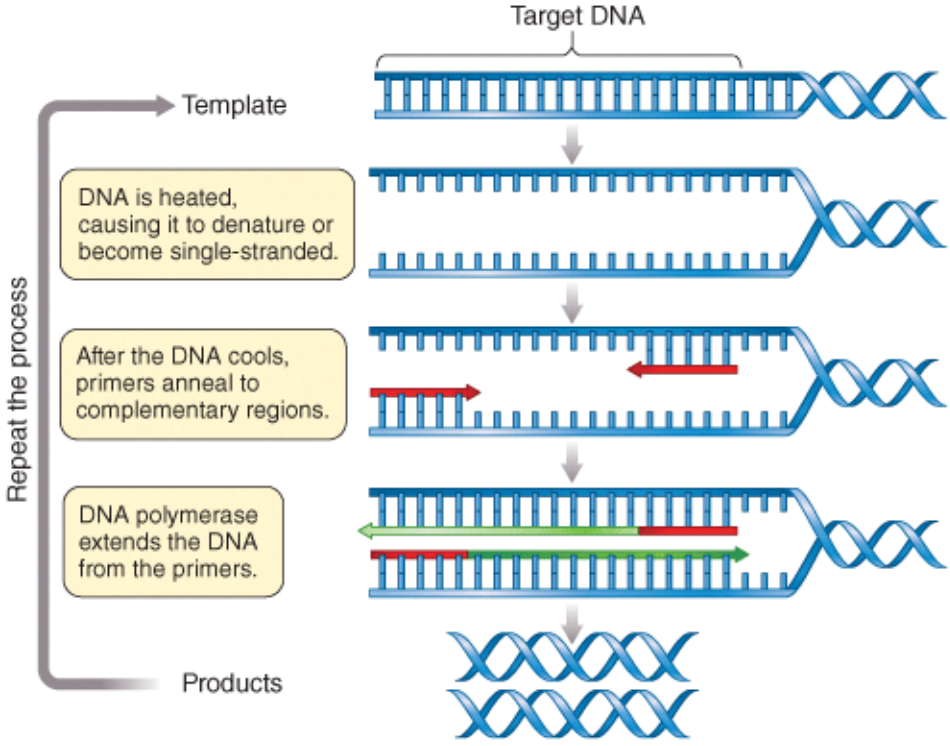
48) The SSUrRNA of an organism is a highly conserved molecule because of its: (Select all that apply)

a) interaction with multiple genes
b) interaction with multiple ribosomal proteins
c) interaction with multiple mRNA sequences
d) vital role within the organism in facilitating protein synthesis
e) vital role within the organism in facilitating chromosomal replication

Answer: b, c, d

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

49) Figure B1.1 represents an artist's attempt to illustrate the process of PCR. How many errors/omissions do you notice in this figure? (Select all that apply)




a) DNA strands are not fully denatured
b)Primers are not shown in the illlustration
c)PCR products are not shown in the illustration
d)Taq polymerase is not shown in the illustration
e)dNTPs are not shown in the illustration

Answer: a, d

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

50) You have found a novel microbe and wish to classify it at the domain level. The new microbe has histones, no membrane organelles and a proteinaceous cell wall. Which other features are likely displayed by this microbe? (Select all that apply)

a) RNA pol II
b) RNA pol II- like polymerase
c) RNA pol III
d) Single RNA polymerase
e) Novel lipid linkages

Answer: b, d, e

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

51) You have found a novel microbe and wish to classify it at the domain level. The new microbe has RNA pol II-like activity, organelles and a proteinaceous cell wall. Which other features are likely displayed by this microbe? (Select all that apply)

a) RNA pol III
b) Histones
c) Novel lipid linkages
d) Single RNA polymerase
e) Nuclear membrane

Answer: a, b, e

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

52) You have found a novel microbe and wish to classify it at the domain level. The new microbe has a single RNA polymerase activity, no organelles and standard plasma membrane structure. Which other features are likely displayed by this microbe? (Select all that apply)

a) RNA pol III-like activity

b) RNA pol III-like activity
c) Histones
d) Nuclear membrane
e) Peptidoglycan cell wall

Answer: e

Difficulty: Medium
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

53) Which abilities might provide plausible mechanisms to explain the endosymbiont phenomenon? (Select all that apply0

a) Development of a phagocytic capability by early eukaryal cells
b) Development of a phagocytic capability by primitive aerobically respiring bacteria
c) Development of membrane invasion by early eukaryal cells
d) Development of membrane invasion by primitive aerobically respiring bacteria
e) All are plausible strategies

Answer: a, d

Difficulty: Hard
Learning Objective: LO 1.2 Define the conserved model of genetic transfer of information found in all organisms on Earth, discussing the possible origins of life on Earth.

54) Which of these factors has universally facilitated infectious disease spread from the plague times until the modern day? (Select all that apply)

a) Visitations from God
b) Unhealthful air
c) Immigration
d) Air travel
e) Poverty and overcrowding

Answer: c, e

Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

55) Despite advances in medical science, there has been a slight increase in deaths from infectious disease in the USA in recent decades. Resaons for this include: (Select all that apply)

a) Bacterial resistance to antibiotics
b) Emergence of new pathogens
c) Decreased production of antibiotics
d) Vaccine ineffectiveness
e) Complacency over the use of vaccines

Answer: a, b, e

Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

56) Which of these are key factors in explaining the similarity between death rates in the world versus sub-Saharan Africa in the 1930s? (Select all that apply)

a) Global unavailability of effective antibiotics
b) Poverty of nations
c) Political instability
d) Lack of sanitation
e) Global unavailability of vaccines for endemic diseases

Answer: a,e

Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

57) Which of these are key factors in explaining the discrepancy between death rates in the world versus sub-Saharn Africa in the 21$^{st}$ century? (Select all that apply)

a) Global unavailability of effective antibiotics
b) Poverty of nations in sub-Saharan Africa
c) Political instability
d) Lack of sanitation
e) Global unavailability of vaccines for endemic diseases

Answer: b, c, d

Difficulty: Medium
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.

Question Type: True/False

58) Polypeptides are the most abundant macromolecule in the cell on a dry weight basis.

Answer: True

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.
Section Reference: Section 1.1 The microbes

59) DNA contributes about 2 to 5% to the dry weight of the cell.

Answer: True

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.
Section Reference: Section 1.1 The microbes

60) Viruses are able to infect all types of cellular life forms.

Answer: True

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.
Section Reference: Section 1.1 The microbes

61) Microbial nitrogen fixation is the conversion of ammonia into dinitrogen gas.

Answer: False

Difficulty: Easy
Learning Objective: LO 1.3 Discuss the various forms of microbial metabolism and the possible ways which microbes may interact with the environment, each other and other organisms.
Section Reference: Section 1.3 Microbial metabolism and ecology

62) The first person to describe bacteria observed under a microscope was Anton van Leeuwenhoek.

Answer: True

Difficulty: Easy
Learning Objective: LO 1.4 Discuss the work of microbiologists, like Louis Pasteur and Robert Koch, and the history of this exciting field that combines medicine and biology.
Section Reference: Section 1.4 Microbes and disease

Question Type: Text Entry

63) Macromolecules that catalyze chemical reactions in the cell are called _____.

Answer: enzymes

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

64) The main difference between the two cell types, prokaryote and eukaryote, is the presence of a _____ in the eukaryote.

Answer: nucleus

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.

65) The three domains of life are _____, _____, and _____.

Answer: Bacteria, Archaea, Eukarya.

Difficulty: Easy
Learning Objective: LO 1.1 Discuss what microbiology is and what separates it from other biological sciences.