

This print-out should have 28 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

Holt Bio 20 07
001 10.0 points

The nucleic acid of a virus consists of

1. either DNA or RNA. **correct**
2. only RNA.
3. both DNA and RNA.
4. only DNA.
5. only phosphate.

Explanation:

Recall

Raven26 10
002 10.0 points

Most viruses form a capsid around their nucleic acid core.

This capsid is composed of

1. lipoprotein(s).
2. protein(s). **correct**
3. antigen(s).
4. glycoprotein(s).
5. monosaccharide(s).

Explanation:

Recall

Raven26 11
003 10.0 points

Virulent viruses multiply infected cells and eventually cause the cell release new viruses by a process called

1. lysis of the host cell. **correct**
2. an alternation of generation in the host

cell.

3. a transfer of material from the host cell.
4. the reduction of the host cell.
5. the transformation of the host cell.

Explanation:

Recall

Raven26 38
004 10.0 points

If the virus enters the lytic phase in a host's cell, it will cause the host cell to

1. shrink because of the loss of cytoplasm used in the synthesis of viral DNA.
2. reject the virus.
3. initiate an attack on the virus.
4. replicate itself at a higher than normal frequency.
5. burst in the presence of abundant viral particles. **correct**

Explanation:

Recall

Raven26 39
005 10.0 points

Scientists have demonstrated that the cholera-causing bacterium *Vibrie cholerae* exists in at least two forms. It usually exists in a rather harmless form; however, a phage conversion can occur which produces a disease-causing, virulent form.

When does the harmless form of the cholera causing bacterium *Vibrie cholerae* undergo conversion in virulent form?

1. A cellular enzyme causes a mutation in the virus genome.
2. The phage alters the host cell, which permits direct entry of the cholera bacterium into the host cell (leading to death in humans).

3. The phage enters the cholera bacterium genome and causing the bacterium's cell to lyse.

4. The phage introduces a gene into the bacterium's chromosome that codes for the cholera toxin (which can cause death in humans). **correct**

5. The phage alters the cell wall of the cholera bacterium, which produces a toxin that can cause death in humans.

Explanation:

Starr 21 13

006 10.0 points

HIV, the pathogen that causes AIDS, is a

1. retrovirus. **correct**
2. viroid.
3. prion.
4. a gram negative bacterium.
5. DNA virus.

Explanation:

Recall

StarrC 20 04

007 10.0 points

What are the two components of all viruses that constitute the genetic material within their protein coat?

1. protein and amino acids
2. protein and monosaccharides
3. nucleic acids and protein **correct**
4. protein and lipids
5. nucleic acids and polysaccharides

Explanation:

The genetic material of a virus is a nucleic

acid (either RNA or DNA). It is contained within a protein coat.

Viral Genetics 01

008 10.0 points

RNA retroviruses evolve more rapidly than those having a DNA genome because

1. they are more prone to attack by host defense mechanisms
2. they lack a permeable capsid
3. they have smaller genomes
4. they lack a glycoprotein envelope
5. reverse transcriptases do not have proof-reading mechanisms that correct mutations **correct**

Explanation:

Greater propensity to mutation means that there is more genetic variation for natural selection to act on.

Viruses and Prokaryotes02

009 10.0 points

Which of the following statements about viruses is true?

1. They are acellular. **correct**
2. They are readily destroyed by antibiotics.
3. They are large and therefore easy to study.
4. They can regulate the movements of substances into and out of the cell.
5. They can reproduce outside of living cells.

Explanation:

Viruses and Prokaryotes12

010 10.0 points

Antibiotics are ineffective as treatments

against viruses because

1. viruses can remain inactive until the antibiotic disintegrates.
2. viruses have RNA instead of DNA.
3. viruses do not have either a cell wall or the ribosomal biochemistry of bacteria. **correct**
4. viruses may reproduce immediately and destroy the antibiotic
5. the nucleic acid of viruses is single-stranded rather than double-stranded.

Explanation:

Holt Bio 20 09
011 10.0 points

Bacterial chromosomes consist of which of the following?

1. linear pieces of DNA
2. a single circular piece of DNA **correct**
3. DNA or RNA in various forms
4. DNA in paired chromosomes
5. only introns

Explanation:

Recall

Raven20 41
012 10.0 points

In bacteria, genes may be transferred through a pilus which acts like a bridge in which process?

1. conjugation **correct**
2. recombination
3. transfection
4. transformation

5. inversion

Explanation:

Recall

Starr 14 21
013 10.0 points

DNA segments that move spontaneously from one region of the genome to another are

1. exons.
2. introns.
3. codons.
4. enhancer.
5. transposons. **correct**

Explanation:

Recall

Starr 15 01
014 10.0 points

In the lactose operon of *E.coli*, the operators

1. releases the repressor protein.
2. encode enzymes that break down lactose.
3. encode the repressor protein.
4. are binding sites for RNA polymerase.
5. bind the repressor protein. **correct**

Explanation:

Recall

Starr 16 03
015 10.0 points

A plasmid is

1. found only in eukaryotes.
2. a bacterial chromosome.
3. a linear fragmentary DNA.

4. a collection of DNA fragments produced by restriction enzymes.

5. a small circular molecule of DNA with only a few genes besides the chromosomal DNA. **correct**

Explanation:

Recall

Starr 21 10

016 10.0 points

A small, self-replication circle of DNA that has a few genes is a

1. lysozyme.
2. plasmid. **correct**
3. transposable element.
4. prion.
5. viroid.

Explanation:

Recall

Starr 21 11

017 10.0 points

In bacterial conjugation,

1. one parent cell gives rise to two daughter cells.

2. plasmid DNA is transferred from one bacterium to another. **correct**

3. there is union between two 'a's or two 'alpha' cells.

4. each cell inherits a single bacterial chromosome.

5. an RNA template is used to synthesize DNA.

Explanation:

Recall

Starr 21 20

018 10.0 points

All bacterial cells are

1. flagellated.
2. prokaryotic. **correct**
3. Gram positive
4. Gram negative.
5. capable of conjugation.

Explanation:

Recall

StarrC 20 02

019 10.0 points

Bacteria can reproduce extremely rapidly.

What is the process by which one bacterial cell divides to form two genetically identical daughter cells?

1. lytic pathway
2. endosymbiosis
3. conjugation
4. prokaryotic fission **correct**
5. mitosis

Explanation:

Bacteria reproduce by prokaryotic fission.

Viruses and Prokaryotes32

020 10.0 points

The transfer of genes by uptake of DNA from dead organisms characterizes which type of gene transfer in bacteria?

1. Conjugation
2. Transference
3. Transformation **correct**
4. Transduction

5. None of these

Explanation:

Viruses and Prokaryotes34

021 10.0 points

In transduction,

1. a part of the bacterial chromosome may be transferred. **correct**

2. only the F plasmid can be transferred.

3. only a particular part of the bacterial chromosome can be transferred.

4. None of these

5. only the part of the bacterial chromosome near the F plasmid can be transferred.

Explanation:

Viruses and Prokaryotes40

022 10.0 points

The occurrence of resistant bacteria is expected to increase. Resistant bacteria are the result of

1. transposons that have inserted themselves into a gene, causing mutation.

2. universal gene segments that have been copied many times.

3. a gene deficiency for the electron transport chain.

4. natural selection due to increased use of antibiotics. **correct**

5. parasites that grow and take control of normal cell activities.

Explanation:

Viruses and Prokaryotes41

023 10.0 points

Genetic diversity is introduced into bacterial populations through

1. All of these **correct**

2. the acquisition of new genes via plasmids and transposable elements.

3. transduction.

4. transformation.

5. conjugation.

Explanation:

Viruses and Prokaryotes46

024 10.0 points

A promoter is the region of

1. plasmid that binds the enzymes for replication.

2. the mRNA that binds to a ribosome.

3. the mRNA that binds tRNAs.

4. None of these

5. DNA that binds RNA polymerase. **correct**

Explanation:

Viruses and Prokaryotes47

025 10.0 points

The lac operon of E. coli consists of

1. a promoter.

2. three structural genes.

3. All of these **correct**

4. an operator.

5. a segment of DNA.

Explanation:

Viruses and Prokaryotes48

026 10.0 points

The three basic parts of an operon are the

1. promoter, the mRNA, and the termination codons.
2. None of these
3. structural gene(s), the mRNA, and the tRNAs.
4. promoter, the structural gene(s), and the termination codons.
5. promoter, the operator, and the structural gene(s). **correct**

Explanation:

Viruses and Prokaryotes52

027 10.0 points

An inducer

1. binds to the termination codons and allows protein synthesis to continue.
2. combines with a repressor and prevents it from binding the promoter.
3. binds to the promoter and prevents the repressor from binding to the operator.
4. binds to the operator and prevents the repressor from binding at this site.
5. combines with a repressor and prevents it from binding the operator. **correct**

Explanation:

Viruses and Prokaryotes57

028 10.0 points

It is found that a certain enzyme is synthesized whenever the solution in which the cells are growing contains substance X. This phenomenon is most likely an example of

1. inducible gene regulation. **correct**

2. positive-negative gene regulation.
3. negative gene regulation.
4. positive gene regulation.
5. repressible gene regulation.

Explanation: