

VIRUSES

1. A virus consists of:

- a. RNA or DNA and a cell membrane
- b. RNA or DNA and a protein coat
- c. RNA and DNA and a protein coat
- d. proteins, cell membrane and RNA

2. How do viruses reproduce?

- a. they divide by mitosis
- b. sexually, by external fertilization
- c. replication outside the host
- d. inserting DNA into the host cell

4. Retroviruses are different from viruses in that:

- a. they have RNA instead of DNA
- b. they can become dormant
- c. they are symmetrical
- d. all of these

5. Vaccines can be used to prevent viral infection by:

- a. creating an immune response in the host
- b. destroying any viruses that enter the host
- c. creating a blocking protein on the cell
- d. preventing replication of the virus

7. Why do some viruses seem to go away and then return later, like a cold sore?

- a. host has been infected with a different strain
- b. the immune system forgot the virus
- c. the virus had entered the lysogenic cycle
- d. the virus mutated

10. What happens after the virus DNA has been taken up by the cell?

- a. it replicates
- b. it breaks down the host DNA
- c. it makes proteins
- d. it makes the host cell burst

BACTERIA

1. Compare and contrast between sexual and asexual reproduction in bacteria.

Sexual reproduction: requires two cells, transfer of genetic material, results in higher diversity, slower, beneficial when environment is unstable

Asexual reproduction: requires one cell, genetic material stays the same, results in identical daughter cells, faster, beneficial when environment is stable

2. How does binary fission differ from conjugation?

Binary fission is a type of asexual reproduction that is different from conjugation (sexual reproduction) in the ways listed above as well as:

Binary fission: growth of the cell, replication of DNA, cell division into two

Conjugation: replication of DNA/plasmid, connection between two cells with pilus, genetic transfer, no new cells produced

3. Compare and contrast the process of transformation and transduction.

They are both mechanisms to transfer resistance!

Transformation: After death or cell lysis, some bacteria release their DNA into the environment. These bacteria may have genes in their DNA for resistance. Other bacteria, generally of the same species, comes into contact with these DNA fragments, take them up and incorporate them into their DNA by recombination and are now resistant.

Transduction: Involves the transfer of DNA from one bacterium to another with the use of a bacteriophage. A bacteriophage is a virus that infects bacteria, thus, knowledge of the virus reproductive cycle is important to understand this.

4. Column A

___f___ 1. small pieces of circular DNA

___e___ 2. using a virus to transfer DNA from one bacterial cell to another

___a___ 3. chromosome replication, followed by cell division

___d___ 4. picking up and incorporating DNA from dead bacterial cells

___c___ 5. special dehydrated cell formed when conditions are unfavorable

___b___ 6. exchange of genetic material through cell-to-cell contact

Column B

a. binary fission

b. conjugation

c. endospore

d. transformation

e. transduction

f. plasmid

PROTISTS

1. Beside each Phyla, state if it is considered to be animal like (A), plant like (P) or fungi like (F)

Chrysophyta___P__

Myxomycota___F__

Ciliophora___A__

Pyrrophyta___P__

Acrasiomycota___F__

Zoomastigina___A__

Euglenophyta___P__

Sarcodina___A__

Sporozoa___A__

2. What characteristics do ALL protists share?

ALL protists are eukaryotes, so they share all of the characteristics of eukaryotic cells. SEE THE EUKARYOTE VS. PROKARYOTE VENN DIAGRAM IN THE NOTES.

3. Why is it important to know the lifecycle of protists such as the paramecium that causes Malaria?

Knowing the lifecycle of a pathogenic protist allows us to be able to target the disease it causes from many different angles. If we only knew that the paramecium that causes malaria attacks our blood cells, it would be very difficult to treat or prevent. Since we know the paramecium goes through mosquitoes, the human liver and blood cells, we can prevent the paramecium from even entering our bodies by preventing mosquito bites.

4. Describe the endosymbiotic theory and how it was involved in the evolution of protists.

The endosymbiotic theory is an evolutionary theory that explains the origin of the first eukaryotic cells (protists) from prokaryotes (bacteria). Some 1.5 bya, prokaryotic cells that did not have the ability to use oxygen or carbon dioxide to produce energy engulfed other prokaryotes that did (aerobic or photosynthetic), but did not digest them. Through billions of years of evolution, these engulfed prokaryotes became the organelles of the anaerobic prokaryotes, from then on known as eukaryotes.

MICROSCOPES

See "Extra Practice Key" under Protists > Labs in website: msforero.weebly.com