

Viruses Quiz Answer Key PDF

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What is the function of the capsid in a virus?

- A. Replicate the virus
- B. Protect the viral genetic material ✓**
- C. Provide energy to the virus
- D. Facilitate viral movement

Which type of virus contains an outer lipid membrane?

- A. Non-enveloped virus
- B. Helical virus
- C. Enveloped virus ✓**
- D. Icosahedral virus

Which of the following is a misconception about viruses?

- A. They can infect all types of life forms.
- B. They are considered living organisms. ✓**
- C. They can only replicate inside living cells.
- D. Antibiotics are ineffective against them.

Outline the steps involved in the viral replication process within a host cell.

1. Attachment: The virus binds to specific receptors on the host cell surface. **2. Entry:** The virus enters the host cell through endocytosis or membrane fusion. **3. Uncoating:** The viral capsid is removed, releasing the viral genome into the host cell. **4. Replication:** The host cell's machinery is hijacked to replicate the viral genome and produce viral proteins. **5. Assembly:** New viral particles are assembled from the replicated genome and proteins. **6. Release:** New virions are released from the host cell, often destroying the cell in the process.

Which of the following viruses is known for causing a pandemic in 2020?

- A. HIV
- B. Influenza
- C. Coronavirus (SARS-CoV-2) ✓**
- D. Hepatitis

Which of the following is NOT a symptom commonly associated with viral infections?

- A. Fever
- B. Fatigue
- C. High blood pressure ✓**
- D. Muscle pain

Which of the following are true about viral life cycles? (Select all that apply)

- A. Attachment to host cell ✓**
- B. Photosynthesis
- C. Replication using host machinery ✓**
- D. Release of new viruses ✓**

How do zoonotic viruses pose a threat to human health, and what measures can be taken to mitigate this risk?

Zoonotic viruses pose a threat to human health by causing diseases that can lead to epidemics or pandemics. Mitigation measures include surveillance of animal populations, vaccination of at-risk species, and public health education.

Which of the following are components of a virus? (Select all that apply)

- A. Genetic material ✓**
- B. Ribosomes
- C. Capsid ✓**
- D. Envelope ✓**

Which of the following viruses are transmitted through bodily fluids? (Select all that apply)

- A. HIV ✓
- B. Influenza
- C. Hepatitis B ✓
- D. Herpes simplex ✓

What is the primary component of a virus that encodes its genetic information?

- A. Protein
- B. Lipid
- C. DNA or RNA ✓
- D. Carbohydrate

Which of the following is NOT a common shape of viruses?

- A. Helical
- B. Spherical ✓
- C. Icosahedral
- D. Complex

Explain how a virus differs from a bacterium in terms of structure and replication.

A virus differs from a bacterium in that it lacks cellular structure and cannot replicate on its own, relying instead on a host cell for reproduction, whereas bacteria are living cells that can reproduce independently.

What are common modes of virus transmission? (Select all that apply)

- A. Direct contact ✓
- B. Airborne ✓
- C. Vector-borne ✓
- D. Photosynthesis

Discuss the significance of the viral envelope and how it affects the virus's ability to infect host cells.

The viral envelope significantly enhances a virus's ability to infect host cells by enabling membrane fusion and providing specific proteins that facilitate attachment and entry into the host.

What is the primary method of transmission for the influenza virus?

- A. Vector-borne
- B. Airborne ✓**
- C. Waterborne
- D. Direct contact

Which of the following practices help prevent viral infections? (Select all that apply)

- A. Vaccination ✓**
- B. Handwashing ✓**
- C. Using antibiotics
- D. Wearing masks ✓**

Describe the role of vaccines in the prevention of viral infections and provide an example of a disease preventable by vaccination.

Vaccines prevent viral infections by training the immune system to recognize and combat specific viruses, with measles being a notable example of a vaccine-preventable disease.

Which viruses are known to have caused significant pandemics in history? (Select all that apply)

- A. Influenza ✓**
- B. HIV ✓**
- C. Hepatitis
- D. Coronavirus (SARS-CoV-2) ✓**

What are some challenges associated with developing antiviral drugs? Provide examples.

Some challenges associated with developing antiviral drugs include viral mutation leading to resistance, the difficulty in targeting viruses without harming host cells, and the complex nature of viral replication cycles. An example is the need for constant updates in flu vaccines due to the rapid mutation of the influenza virus.