

Name \_\_\_\_\_

Period \_\_\_\_\_

Ms. Foglia

Date \_\_\_\_\_

### AP: CHAPTER 18: MICROBIAL MODELS

1. What makes microbes good models to study molecular mechanisms?

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2. List several characteristics of viruses.

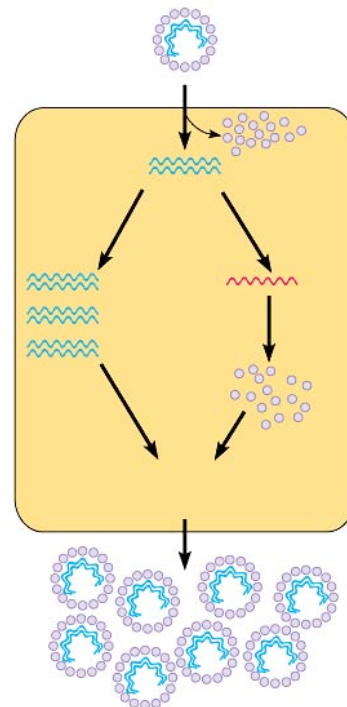
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3. What are the two basic components of viruses? \_\_\_\_\_

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4. Use the diagram to help explain typical viral reproduction.

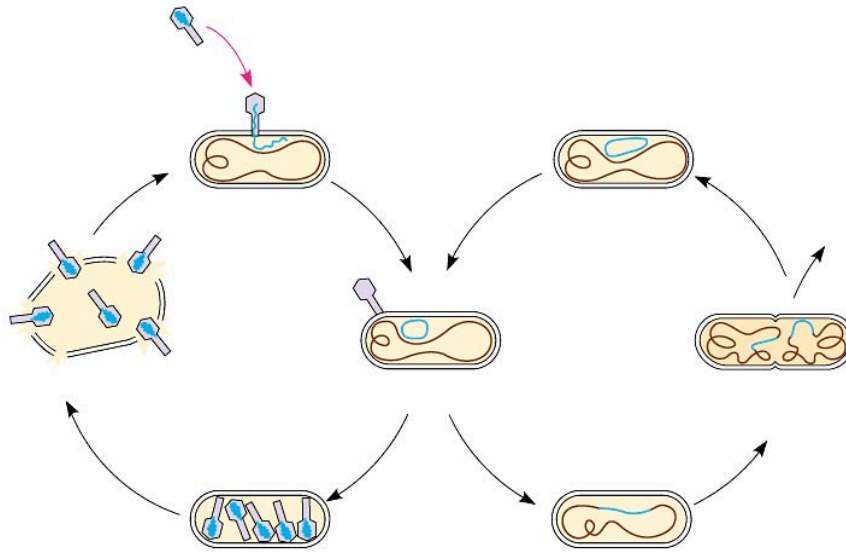


5. Identify the cycle used by the virulent phage.

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6. Compare the lytic and lysogenic cycles.

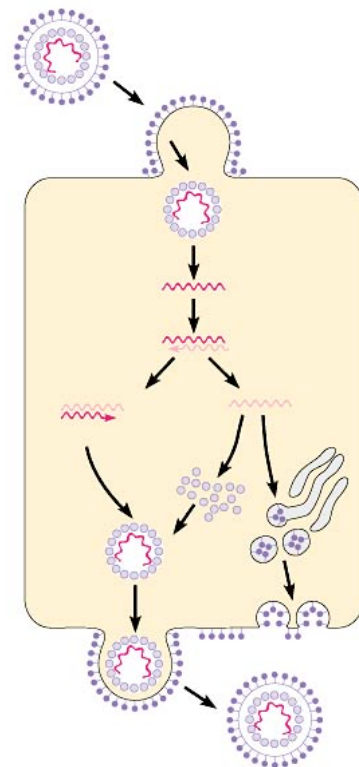


7. What is the role of the viral envelope?

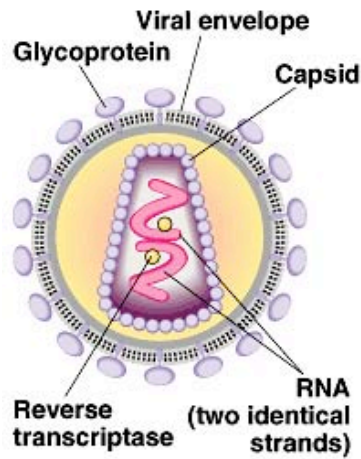
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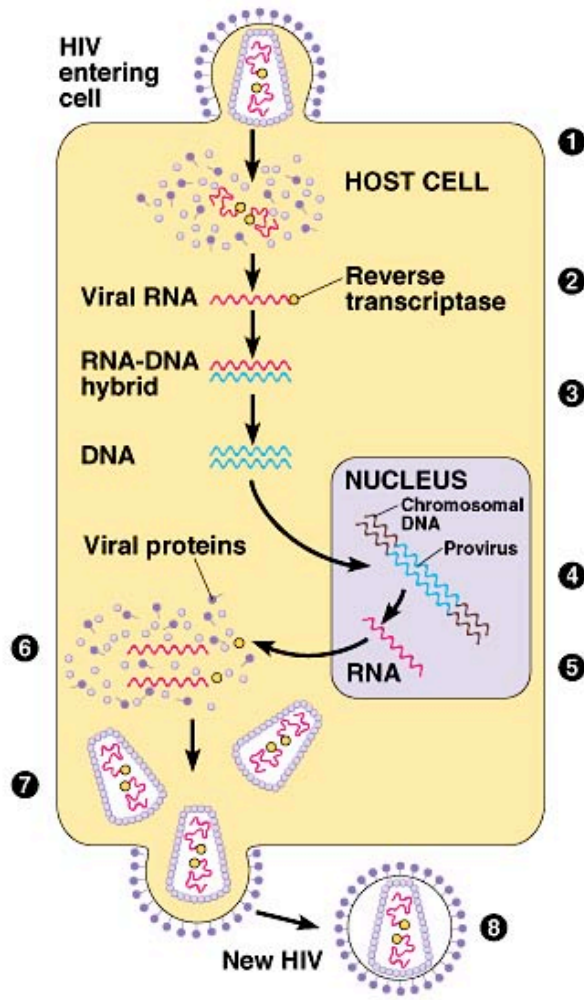
8. Outline the steps in the life cycle of the envelope viruses.



9. Review the life cycle of the HIV virus.



(a) The structure of HIV, the virus that causes AIDS



(b) The reproductive cycle of HIV

10. What is reverse transcriptase and why is it important in biotechnology?

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11. What is a vaccine?

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12. Where do emerging viruses come from?

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13. What is a viroid? Give some examples.

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14. What is a prion and what do they do to the cells?

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15. List and describe the three basic shapes of bacteria used for classification.

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16. Most bacteria are not pathogenic. Identify several important roles they play in the ecosystem and human culture.

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17. How do variations arise in bacteria considering they reproduce mostly by asexual means?

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18. Define bacterial transformation.

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19. How does transduction differ from transformation?

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20. What is a plasmid and identify its role in bacterial conjugation?

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21. What is the major method utilized by bacteria to pass along resistance to antibiotics?

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22. What is a transposon?

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23. Describe potential problems caused by transposons.

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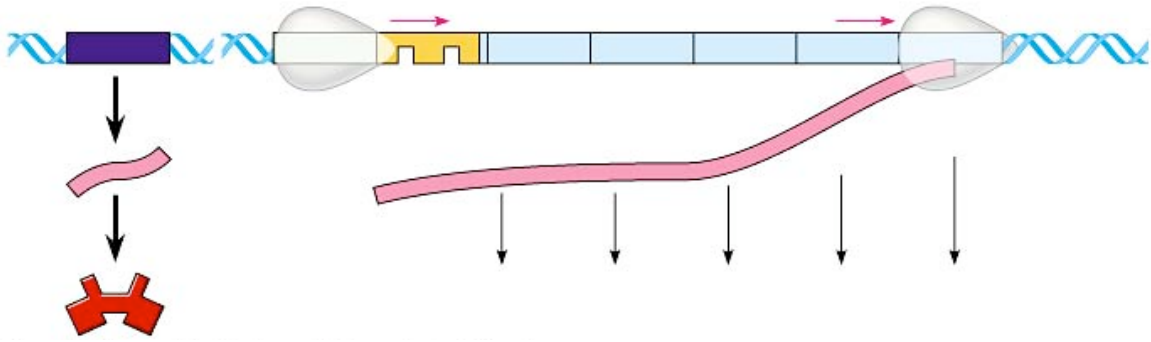
24. E. coli use a regulatory system called an operon. Identify the components with their functions of the operon.

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25. Use the diagram of the Tryp operon to outline how it regulated tryptophan levels.



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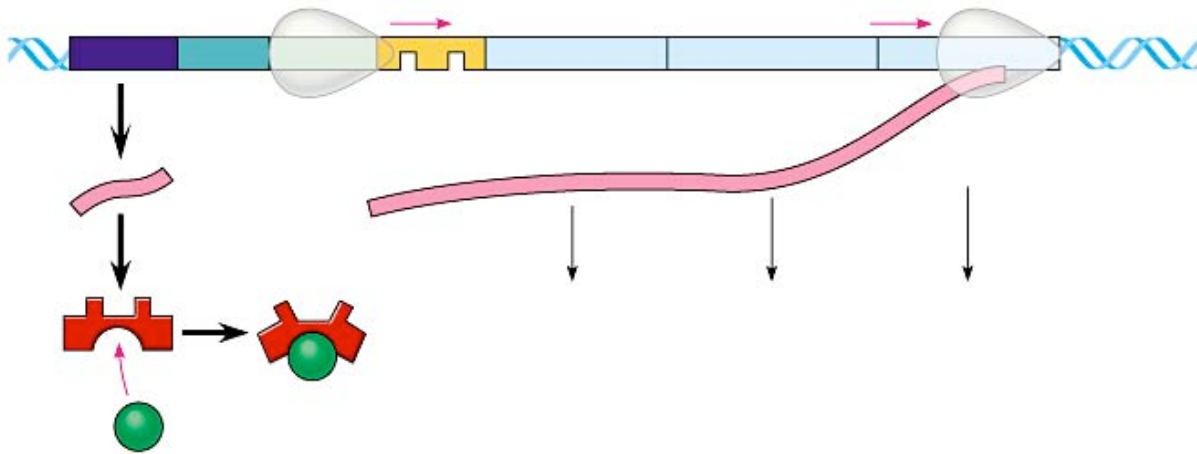
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26. Describe how the trp operon is a repressible operon.

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27. Use the diagram of the lac operon to outline how it regulates glucose levels.



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28. Does the diagram above represent the condition for the absence or presence of lactose?

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29. Describe what happens when lactose is absent.

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30. How is the lac operon an inducible system?

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31. Summarize how the presence and absence of glucose influences the lac operon.

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