

TEST III

Bio 425
Fall 2007

Name

1. Fill in the Blank (2 points each)

1. Bacteriocins are antibiotics produced by bacteria that carry a(n) ____.

2. The *E. coli* genome consists of ____ open reading frames.

3. Interrupted mating experiments were used to generate the first ____ maps.

4. During ____ transposition the transposon removes itself from the genome and physically inserts into a new place in the genome.

5. When the F plasmid inserts into the genome it is called a(n) ____.

6. Plasmids can be lost from a host cell by the process called ____.

7. *Mycoplasma genitalium* has a very small genome consisting of only ____ open reading frames.

8. Phase variation is caused by a gene that undergoes ____ in the genome.

9. The presence of reverse transcriptase in the human body is indicative of infection with a(n) ____.

10. Primary tissue culture lines must be transformed to form ____ tissue culture lines.

11. A(n) ____ assay is used to count bacteriophage.

II. Briefly Define (2 points each)

39. R plasmids

40. Cytokines

41. Horizontal gene transfer

42. Penicillin selection

43. IgA

44. *Enterococcus*

III. Draw (6 points)

45. Draw an IgG molecule and label its parts.

IV. Discussion

46. Describe the differences and similarities between generalized and specialized transduction. **(6 points)**

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1. Fill in the Blank (2 points each)

1. *Mycoplasma genitalium* has a very small genome with only ____ open reading frames.

2. *E. coli* has a larger genome that contains ____ base pairs.

3. The host ____ makes up the outer coat of an enveloped virus.

4. Some bacteriophage contains the enzyme, ____, which permits them to drill through the peptidoglycan of their host.

5. Animal viruses grow in living animals or in ____ culture.

6. Bacteriophage creates ____ when they grow in a lawn of it's host.

7. When cancer is said to have ____ that means simply that the cancer has spread from its point of origin.

8. In the USA, Epstein Barr virus causes infectious ____.

9. A Rhabdovirus cause the human disease called ____.

10. A rhinovirus is classified as a ____ RNA virus.

11. Mad cow disease is thought be to cause by an infectious ____.

12. ____, the best studied virus, can be either virulent or temperate.

13. The Mutator phage is an example of the largest member of the group____.

14. *Propionibacterium* is typically found on human_____.

15. At one time the human stomach was thought to be sterile but now we know it can contain the bacterium, ____ *pylori*.

16. The most abundant aerobic bacterium in the human large intestine is ____.

17. Cholera toxin is an example of a(n) ____ which is a subcategory of exotoxins.

18. The enzyme, ____, is highly correlated with virulence in *Staphylococcus*.

19. The most common cause of bacterial pneumonia is ____ *pneumoniae*.

20. The human intestine typically has concentrations of bacteria at____cells/gram.

21. A transitory non-threatening bacteria infection of the blood is called ____.

22. ____ pathogens are part of the body normal flora that ususally don't harm the body but under the right circumstance can cause disease.

23. A(n) ____ is an enzyme that attacks and destroys red blood cells.

24. ____ is the largest molecule of the immunoglobulins.

25. ____ is the only immunoglobulin capable of passing through the placenta from mother to child.

26. Antigenic determinants are also called ____.

-
27. Some T cells release chemical signals called ____ .
-
28. ____ vaccine consists of an antigen gene spliced into a plasmid.
-
29. ____ is generally considered the “father” of epidemiology.
-
30. ____ infections are ones you catch while you are in the hospital.
-
31. ____ are inanimate objects that are capable of spreading infection.
-
32. Typhoid Mary is the best known example of a(n) ____ carrier.
-
33. If a sufficient portion of a population is immunized so that an epidemic can’t occur then the population is said to have ____ immunity.
-
34. A world wide epidemic is called a(n) ____.
-
35. ____ refers to the practice of isolating sick individuals from the healthy population.
-
36. Strep throat is caused by the bacterium, *Streptococcus* ____.
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- 37 Rubeola is another name for the disease, ____ .
-
38. ____ is the drug that has made AIDS a manageable disease.
-
39. Varicella causes ____.
-
40. On college campuses, the most common STP is caused by a member of the genus ____.

41. The ____ test is a skin test to check for exposure to tuberculosis
42. Diphtheria is caused by a member of the genus ____.
43. The presence of a chancre is diagnostic of the disease ____.
44. The surface antigens, hemagglutinin and ____, are used to characterize the different strains of influenza.

II Draw (4 points)

45. Draw and label the parts of an immunoglobulin molecule

III Discussion

46. Why are influenza viruses so potentially dangerous? **(3 points)**

47. What is the difference between a polyclonal and a monoclonal antibody? How would you make a monoclonal antibody? **(5points)**

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1. Fill in the Blank (2 points each)

1. When a plasmid becomes imbedded in its host genome it is called a(n) ____.
2. In ____ transposition, a new transposon is created which then insert randomly into the host genome.
3. *E. coli* has about ____ open reading frames in its genome.
4. A(n) ____ is an antibiotic produced by a plasmid that kills related strain that do not carry the plasmid.
5. ____ plasmids protect their host from commercial antibiotics.
6. The first gene maps were made using ____ mating experiments.
7. The individual proteins that make up a capsid are called ____.
8. Primary tissue culture lines must be ____ to create permanent tissue culture lines.
9. A(n) ____ consists on two insertion sequences with a gene in the middle.
10. When cancer cells spread they are said to ____.
11. Infectious proteins are called ____.
12. The virus that causes chickenpox can reappear as the disease ____.
13. -SS RNA viruses must contain the enzyme, ____, to allow them to infect.

14. The first genome ever sequenced was the bacteriophage ____ .

15. The T phages try to avoid their host defense mechanisms by incorporating the unusual base ____ in their genome.

16. Infectious naked circles of SS RNA are called ____.

17. ____ *Streptococcus* cause of strep throat.

18. The most abundant organisms in the human large intestine are ____.

19. ____ are cytolytic toxins that attack red blood cells.

20. ____ pathogen are part on the normal flora that only cause disease when they are in the wrong place or in a weaken host.

21. The enzyme, ____, is highly correlated with virulence in *Staphylococcus*.

22. Cholera toxin is a subcategory of exotoxins called ____.

23. ____ *pneumoniae* is the most common cause of pneumonia in humans.

24. T cells produce chemical signal called ____.

25. The particular portion of an antigen which attaches to the antibody is called a(n) ____.

26. Gamma globulins are produced by ____ lymphocytes.

27. Hybridoma are used to produce ____ antibodies.

28. ____ reactions are where particles clump and are removed from suspension.

29. ____ vaccines are denatured toxins.

30. ____ Vaccines are made by putting an antigen gene into a plasmid.

31. The ACLU was founded to defend a chronic disease carrier named ____.

32. ____ is a world wide epidemic.

33. Incidence measure the number of new case is a time period whereas ____ measure both the old and new cases of disease.

34. ____ are inanimate objects that spread disease.

35. ____ fever is caused by a *Streptococcus* that contains extra genes on a bacteriophage.

36. Toxic shock is caused by a member of the genus ____.

II. Briefly Define (2 points each)

37. HFr

38. horizontal gene transfer

39. enveloped viruses

40. HIV

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1. To increase the rate of transfer by ____, recipient cells can be made competent.

2. In ____ transduction only the genes near the phage insertion site can be transferred.

3. A(n) ____ plasmid codes for the ability to transfer itself from one host to another.

4. An HFr strain is a bacterium that carries its F plasmid as a(n) ____.

5. There are approximately ____ open reading frames in the *E. coli* genome.

6. The first ____ were created from the data produced from interrupted mating experiments with bacteria.

7. During ____ transposition, a second copy

of the transposon is produced and it inserts randomly into the host genome.

8. *Mycoplasma genitalium* with ____ open reading frames has the smallest genome of any free living bacterium.

9. A(n) ____ has as its outer coat its host's cell membrane.

10. Retroviruses all contain the unique enzyme, ____, in their virion.

11. All -ssRNA viruses must contain the enzyme, ____, in their virion.

12. Primary tissue culture lines can sometimes be transformed into ____ tissue culture lines.

13. All ssDNA viruses must reproduce through ____ intermediates.

14. In ____ viruses, upon entering the host their genome is immediately translated into protein .

15. The ____ sheath allows T7 phages to inject their genome into the host cell.

16. The MS2 bacteriophage is said to be “____” specific because it attaches to the sex pili of its host.

17. ____ is an example of a latent virus found in humans.

18. Most common colds are caused by viruses in the group ____ .

19. Influenza is a unique virus because its genome is ____.

20. Viroids are small circles of naked RNA that only contain ____ bases.

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21. Prions cause a disease in sheep called ____.
-
22. Some viruses have ____ genes in which a single piece of nucleic acid is used to make 2 different proteins.
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23. ____ and *Propionibacterium* are generally the 2 most common bacteria found on our skin..
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24. *Helicobacter* contains a species of bacteria that cause ____ in humans.
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25. The most abundant bacteria in the human intestine belong to the genus, ____.
-
26. Animals raised germ free are called ____.
-
27. ____ *pneumoniae* is the most common cause of bacterial pneumonia.
-
28. The human large intestine typically contains ____ cells per gram wet weight.
-
29. Pus is formed by ____ which destroys white blood cells at the site of the wound.
-
30. ____ are toxins that attack the lining of the intestine.
-
31. ____ cells produce cytokines which interacts with various components in the immune system.
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32. Secretory immunoglobulins belong to the group called Ig____.
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33. Everyone has unique surface antigens called ____ which are used for tissue typing in preparation for organ transplants.
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34. Allergies are caused by immunoglobulins in the group Ig____.

II. Draw (6 points)

48. Draw and label the parts of an IgG molecule.