

## Take-Home Quiz III

**General Instructions and Information:** Obtain an answer sheet from the instructor and legibly write your name in the appropriate space. After placing your name on the answer sheet, you must enter your patron ID number (NOT your social security number) in the appropriate space and darken the corresponding bubbled numbers. Should you not enter your patron ID number or incorrectly darken the bubbles, five (5.0) points will be deducted from your final score for this quiz. In addition, be sure to place the instructor's last name on the lines provided.

This Take-Home Quiz consists of fifty (50) true-false statements. When answered correctly, each is worth one point (1.0) point. Hence, a total of 50 points are available on this quiz. Please note that your answer sheet is due NO LATER than 10:00 AM, Friday, June 17th. Answer sheets returned later than this deadline will not be accepted and a score of "0" will be recorded.

**Note the following restrictions:** You are permitted to collaborate on this quiz with other students who are currently enrolled in this course. However, you are not permitted to just copy answers from one another. You must make an honest effort to actively gather the answers by yourself or within a study group. The lack of a good faith effort on your part will be considered academic dishonesty. Also, receiving help from students not enrolled in this course or from sources other than those specifically associated with this course will be considered an act of academic dishonesty. Such incidents will not be tolerated and will be handled according to course and University policy.

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**Instructions For Answering True/False Questions:** The following forty (40) questions are all taken from material presented in Chapters 1 through 6 of your textbook. Read each statement very carefully. Determine the statement, *as written*, is true or false. If you believe that statement is true, then darken the "A" bubble on the appropriate line of the answer sheet corresponding to the question you are answering. If you believe that statement is false, then darken the "B" bubble on the appropriate line of the answer sheet corresponding to the question you are answering. In doing so, be sure to follow the instructions on the back of the answer sheet. Mismarked answer sheets (i.e, answers placed out of order) will not be rescored. Hence, you are strongly encouraged to review your answer sheet before returning it.

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1. Almost all known plant viruses are RNA viruses.
2. Chlamydiae are incapable of producing their own ATP and must rely on their host to supply it.
3. Like bacteria and eucaryotic microorganisms, most viruses can be cultured on artificial media.
4. Archaeal sulfate reducers use elemental sulfur as an electron acceptor.

5. If the NaCl concentration drops below 1.5 M the cell walls of *Halobacterium* disintegrate.
6. Bacterial viruses are so named because they have procaryotic cell structures similar to their bacterial hosts.
7. The most common capsid morphologies are icosahedral and helical.
8. Actinomycetes are gram positive aerobic spore forming bacteria.
9. Actinoplanetes that dwell in the soil play an important role in plant and animal decomposition.
10. Features considered taxonomically important to the actinomycetes include peptidoglycan composition and structure, and morphology and color of mycelia and sporangia.
11. Members of the genus *Micrococcus* are generally not pathogenic.
12. *Bifidobacterium bifidus* is a major pathogen in breast-fed babies.
13. A few species of actinomycetes have been found to be pathogenic in humans, other animals, and plants.
14. Actinomycetes produce many of the antibiotics we use in medicine.
15. *Staphylococcus aureus* is coagulase positive which means it can cause blood plasma to clot.
16. Many bacteria that were originally classified in the genus *Streptococcus* are now placed into 2 new genera, *Enterococcus* and *Lactococcus*.
17. The genus *Mycoplasma* requires cholesterol for growth, and includes species that cause diseases in humans and animals.
18. Methylophilic bacteria generate ATP by oxidizing methane to methanol then to formaldehyde which is excreted.
19. *Rickettsia* species are unable to use glucose as a carbon and energy source, but can use glutamate or succinate.
20. Members of the genus *Pseudomonas* metabolize glucose *via* the Embden-Meyerhoff pathway.
21. *Haemophilus influenzae* type b is a causative agent of meningitis in children.
22. Although discussed with the bacteria, Rickettsias are small obligate intracellular parasites and are therefore, more properly classified as viruses.

23. The ability of the deinococci to resist radiation is due in part to an unusual ability to repair chromosome damage, even fragmentation.
24. Green sulfur bacteria are nonmotile but can control their depth by using gas vesicles to control buoyancy.
25. A trichome is a bacterial cell with three different photosynthetic pigments.
26. Cyanobacteria are so named because many species have a blue-green appearance caused by the photosynthetic pigment phycocyanin.
27. Unlike other procaryotes archaeons do not organize their genes into operons.
28. Methanogenic *Archaea* do not have a complete TCA cycle.
29. Some methanogenic *Archaea* are capable of fixing nitrogen.
30. The RNA polymerase enzymes of the *Archaea* are more similar to eucaryotic enzymes than to bacterial enzymes.
31. Plasmids are very common in the *Archaea*.
32. Archaeons are not known to incorporate (fix) carbon dioxide.
33. Although there are other classification schemes for procaryotes, the one used in *Bergey's Manual* is currently considered by most microbiologists to be the standard.
34. In microorganisms as in higher organisms, species are usually defined by sexual interbreeding capabilities and by reproductive isolation.
35. Microorganisms do not generally reproduce sexually, therefore, species are usually defined by phenotypic and genotypic similarities.
36. The type strain is the most representative strain of a particular species.
37. Prions consist of proteins and have no apparent nucleic acid genome.
38. There are no known human diseases that have been linked to prions.
39. The mechanism of pathogenesis by prions may involve a conformational change in the prion protein (PrP) to an abnormal form.
40. Enveloped viruses may enter their host cells by engulfment within coated vesicles (phagocytosis).
41. Viruses infecting algae have never been detected.

42. Available evidence is consistent with the proposal that prion diseases are caused by infectious proteins.
43. Bacteriophage have played an important role in the history of molecular biology and virology, but have not proved useful in practical applications such as treating patients with bacterial infections.
44. Glucosylation of hydroxymethylcytosine residues protects phage T4 DNA from cleavage by bacterial restriction enzymes.
45. In the case of phage lambda, termination of lysogeny and entry into the lytic cycle usually occurs in response to environmental damage to the host DNA.
46. Late viral mRNAs are produced just prior to the onset of DNA replication.
47. Early viral mRNAs are usually transcribed by a virus specific polymerase that is carried in the free virion.
48. Viruses in the extracellular state possess few, if any, active enzymes.
49. The presence or absence of an envelope is not useful in classifying viruses because any given virus may at one time have an envelope and at another time not have an envelope.
50. Viruses have typical cellular structure like other living organisms.