

Study Guide for Unit 3

1. Know the rules of binomial nomenclature and be able to apply them to bacteria and fungi. Why are they difficult to apply to bacteria and fungi?
2. Be able to dissect some microbe names.
3. Know the taxonomic ranks/categories.
4. Know the 5-Kingdoms
5. Know the **characteristics and examples of each** Kingdom.
6. If given a dichotomous key with Kingdom characteristics, be able to fill in the blanks with the Kingdoms.
7. Understand other methods of classifying microbes, i.e.; numerical, genetic homology, ribosomal RNA sequences, immunological reactions, and phage typing.
8. Know other methods of classifying bacteria (Table 9.4).
9. Know what Bergey's manual is and the four categories it uses to classify organisms.
10. Know the main difference between Eubacteria and Archaeobacteria and the characteristic this difference confers.
11. Why do *Richettsiae* and *Chlamydiae* pose problems with nomenclature?
12. Know the basic structures of viruses and how they are classified.
13. Be familiar with the viruses that caused viral epidemics.
14. What are the characteristics of a virus? Are they living organisms?
15. Understand what is host range and specificity means.
16. Know what minus (-), plus (+) sense, and double stranded RNA virus are.
17. Know what a DNA virus is.
18. What is a bacteriophage? Why do they have leg-like structures?
19. Know what family and category the following viruses fall into: rabies, influenza, Ebola, Hanta, LaCross, Chickenpox, herpes, Human papillomavirus, smallpox, HIV, and polio and the common cold.
20. Know the steps to viral replication.
21. Be able to explain the lytic and lysogenic cycles of a virus and what triggers a latent virus to become lytic.
22. Know what viroids and prions are.
23. Is a prion a nucleic acid or protein? Why?
24. What are some examples of diseases caused by prions?
25. Why do viruses cause tumors and cancers? Know a virus that causes tumors.
26. Know the organism that causes malaria and the life cycle.
27. Know the 9 divisions of protists and examples from the lab of each.
28. What is the difference between a plasmodial and cellular slime molds.
29. What is a fruiting body?
30. Be able to define mycology, thallus, mycelium, conidia, conidiophore, germination, plasmogamy, karyogamy, hyphae, septate hyphae, and non-septate hyphae.
31. Know the 4 divisions of fungi and the characteristics and examples of each.
32. Know the basic lifecycle of fungi.
33. Know the reproductive structures of all the divisions of fungi.
34. What is a lichen?
35. What is mycorrhizae?
36. Know the two categories of helminths and examples of each.
37. Know the diseases caused by the two categories of helminths.
38. What are some diseases transmitted by arthropod vectors? Table 11.5
39. Define sterility.
40. Understand the differences between cidal and static. Be able to identify them from a graph.
41. Be able to define sterilants, disinfectants, antiseptics, germicides, sanitizers, and antibiotics
42. Understand the conditions affecting antimicrobial activity.
43. Understand the two methods of measuring antimicrobial activity. Some material from the lab.
44. Know the three mechanisms of action for disinfectants.
45. Understand how chemical agent such as soaps & detergents, quats, acids & alkalis, heavy metals, halogens, alcohols, phenols, oxidizing agents, alkylating agents, and dyes work. Know the examples of each.

46. Know the kinds of moist heat and how they are applied: i.e. boiling, pasteurization, & autoclave. What does each process kill.
47. Know the two kinds of dry heat and how each is applied. How effective are they?
48. What effect does low temperatures have on microbes? Compare freezers and liquid nitrogen.
49. Desiccation -- Compare drying with lyophilization.
50. Note the differences and examples of non-ionizable versus ionizable radiation. How does each work to kill bacteria?
51. How does filtration work?
52. How does osmotic pressure work and how effective is it at killing microbes.
53. Table 12.5 will be helpful.