

## **Prokaryotes and Viruses**

1. Review what you learned previously about prokaryotic cells (size, structure, etc). Flagella, cell walls, chromosomes, plasmids, etc.
2. What is the difference between eubacteria and archaea? Where, in general, do you find each type of cell? Give some examples.
3. Describe prokaryotic cell morphology (coccus, bacillus, spirochete, spirillum, vibrio, pleomorphic).
4. What is a sex-pilus and what is bacterial conjugation? What is prokaryotic binary fission? How is it different from mitosis?
5. What is a biofilm and how is it formed? Define glycocalyx, capsules, slime layers. Give examples of where you might find a biofilm.
6. What is normal flora? How is that different from obligate pathogens and opportunistic pathogens? Give an example for each.
7. What are viruses? Describe their overall structure. Describe their morphology (draw a picture) of helical (rod), polyhedral and bacteriophage viruses.
8. What is a viral envelope? Where does it come from? How does an envelope help a virus gain entry into host cells?
9. Describe, in general, a viral life cycle, including how it gets into the body of the host and how it recognizes, gets into the cells, gets its genome inside and how it replicates.

## **Protozoans and Fungi**

1. Describe the general characteristics of protists. Where do they fit in the domain/kingdom systems? Describe and give some examples of organisms that are protists.
2. Describe the characteristics and give an example of protists belonging to the following groups: animal-like protists, plant-like protists, fungi-like protists.
3. What kind of protists are algae? What are “red-tide”, Giant kelp and diatoms?
4. Give some examples of protists that are human parasites.
5. Describe the general characteristics of fungi. Where do they fit in the domain/kingdom systems? Describe and give some examples of organisms that are fungi.
6. How do fungi obtain nutrients? What are hyphae, mycelium and spores?
7. What are yeast and how do they reproduce? What industrial uses are there for yeast?
8. What do athlete’s foot, jock itch and ring worm have in common? What is thrush?