Biology 11 page 378/379 Answers

Content Review

1. D
2. D
3. B
4. B
5. D
6. A
7. C
8. D

True/False

1. T
2. A virus is composed of DNA or RNA surrounded by a protein coat.
3. Bacteria are Prokaryotes
4. Cocci are spherical bacteria. OR Spirilla are spiral shaped bacteria.
5. Bacteria that can live with or without oxygen are known as 'Facultative Anaerobes'.
6. Bacteria that trap the energy of sunlight in a manner similar to green plants are called 'Phototrophic Autotrophs'.
7. In bacteria, Conjugation involves the transferring of genetic material from one cell to another.
8. Pathogens are disease causing agents.

Word Relationships:

1. Phototrophic Autotroph doesn't belong – the others describe how the bacteria react to oxygen.
2. T4 doesn't belong. The others are types of bacteria.
3. Prophage doesn't belong. The others are shapes of bacteria.
4. Tetanus doesn't belong – it's caused by a bacteria. The others are diseases caused by 'viruses'.

5. Eukaryote:human Prokaryote:bacteria
6. Rod-shaped:bacillus Spherical:cocci
7. Oxygen:obligate aerobe no oxygen:obligate anaerobe
8. Archaebacteria:methanogens cyanobacteria:blue-green algae

Concept Mastery:

1. Viruses are considered parasites because they need a host in order to survive. They cannot reproduce and live on their own. They also often cause damage/kill the host in the process.
2. A gram positive bacteria has a thick peptidoglycan layer in their cell walls, and as a result and will stain purple (from Crystal Violet). Gram negative bacteria have thin peptidoglycan layers in their cell walls, and therefore will stain pink (from Safranin).
3. Bacterial Autotrophs will make their own food through photosynthesis. Heterotrophs need organic molecules (from other organisms) in order to survive.
4. One example of a symbiotic relationship is how E Coli bacteria reside in our intestines and help us break down food and get minerals/vitamins from it. Another example is the Rhizobium bacteria that live on plant roots which fix nitrogen for the plants.
5. Bacteria are important for the environment by:
    a. Decomposing and recycling nutrients in the ecosystem – breaking down dead material.
    b. Breaking down sewage
    c. Fixing nitrogen for plants
6. Bacterial reproduction:

a. Binary fission – bacteria copies DNA, splits down middle and makes 2 identical copies
b. Conjugation – 2 bacteria connect through a bridge and one donates a piece of DNA to the recipient thereby creating a new genetically different bacteria.
c. Spore formation – bacteria in difficult times will protect themselves by creating an 'endospore' to enclose its DNA and a bit of cytoplasm until conditions are more favourable.