Mastery Series: Viral Structure

1. What are the 5 types of pathogens we've discussed in this class.
    a. give a species example for each one.
2. Another name for a virus is a _____.
3. At minimum, what are the parts of a virus?
4. Describe the different ability of a DNA virus versus an RNA virus.
5. Based on your understanding of nucleic acids in viruses, which type of nucleic acid do wart viruses have? Why?
6. What type of genes are contained in viral nucleic acid?
7. Compare DNA viruses and retroviruses with RNA viruses.
8. How does the virus replicate its nucleic acid?
9. Could a bacteriophage have "spikes"? Why not?
10. Where does an animal virus get its lipid coat?
11. What does obligate intracellular parasite mean? Define each part of the name.

Mastery Series ANSWERS: Viral Structure

1. What are the 5 types of pathogens we've discussed in this class—give example for each.
   Bacteria—*S. aureus, E.coli
   Protist—*Giardia, Plasmodium
   Fungus—*Candida albicans
   ***Helminth—*Taenia* (tapeworm)**
   Virus—*Influenza
2. Another name for a virus is a **_phage_____**.
3. At minimum, what are the parts of a virus? **Nucleic acid, polymerase, capsid**
4. Describe the different ability of a DNA virus versus an RNA virus. **DNA viruses can incorporate into host DNA**
5. Based on your understanding of nucleic acids in viruses, which type of nucleic acid do wart viruses have? Why? **Papilloma viruses (warts) are DNA viruses and can live for long periods of time in the skin.**
6. What type of genes are contained in viral nucleic acid? **Genes for the capsid**
7. Compare DNA viruses and retroviruses with RNA viruses. **DNA viruses and retroviruses may incorporate into host DNA and therefore may be latent or long-lasting. RNA viruses run their course more quickly, in general. E.g. Ebola: RNA virus; HIV: retrovirus; Varicella: DNA virus**
8. How does the virus replicate its nucleic acid? **Using its polymerase**
9. Could a bacteriophage have "spikes"? Why not? **Probably not. Spikes are found on lipid envelopes; and only viruses that infect eukaryotes may have lipid envelopes.**
10. Where does an animal virus get its lipid coat? **From the host organism cell membrane**
11. What does obligate intracellular parasite mean? Define each part of the name. **Obligate "must"; intracellular "live inside"; parasite "uses host machinery" Viruses are obligate intracellular parasites**