PRE-LAB ASSIGNMENT 3: Microbial Growth and Evolution

**For each question below, select your answer from the scale and then explain your choice in your own words. We are not looking for a right answer. Please answer with full sentences, each answer should be several sentences. (2 Pts/Q)**

1. **“How would you explain antibiotic resistance to a fellow student in this class/to a professional colleague?”**

**I would explain antibiotic resistance as bacteria developing mechanisms that allow them to not be affected by antibiotics. I would also explain antibiotics as medicine that is produced to get rid of bacteria that have harmful effects on the host.**

1. **“Individual bacteria develop mutations in order to become resistant to an antibiotic and survive.”**

**Strongly Disagree Disagree Agree Strongly Agree**

**Genetic recombination of bacteria lead to some bacteria developing mutations that prevent antibiotics from killing them and eventually pass these on. Mutations are important for developing resistance because changes in genetic code help create mechanisms and products for bacteria to survive.**

1. **“Individual bacteria are genetically similar and equally likely to be killed by an antibiotic.”**

**Strongly Disagree Disagree Agree Strongly Agree**

**I disagree because there is a lot of genetic diversity in bacteria and they exchange genetic information and undergo mutations frequently. Since there is a lot of genetic diversity there is not an equally likely chance for them to be killed by an antibiotic.**

1. **“Bacteria develop resistance to antibiotics because of changes within humans.”**

**Strongly Disagree Disagree Agree Strongly Agree**

**I do not think its changes within humans that cause bacteria to develop resistance to antibiotics. However, I believe that exposure to antibiotics over time causes bacterial colonies to develop resistance to the antibiotics.**

1. **“Antibiotic resistance is an example of evolution.”**

**Strongly Disagree Disagree Agree Strongly Agree**

**I strongly agree because evolution is the development of species over time to adapt to their surroundings. So bacteria developing antibiotic resistance is an example of evolution because they are adapting to environments that antibiotics are being introduced to survive.**