第一部分(问答题)

1. What is an episome? A R plasmid (resistance factor, R factor)? (8%)

2. Describe the following media and their uses: (12%)
   1) defined media  
   2) selective media  
   3) enriched media

3. Describe the process of anaerobic respiration. Is as much ATP produced in anaerobic respiration as in aerobic respiration? Why or why not? (12%)

4. Briefly describe slime layers and S-layers of prokaryotes. (8%)

5. What are riboswitches? How are they similar to attenuation as described for the \( trp \) operon? How do they differ? (10%)

第二部分(问答题)

1. Please define the term “species”, “strain”, and “clone”. (10%)

2. How to cultivate the plant virus, animal virus and bacteriophages? (10%)

3. What are the archaea? Briefly describe the major ways in which they differ from bacteria and eukaryotes. (10%)

4. What is biogeochemical cycling? Please draw a figure show the nitrogen cycle and its related microbes. (10%)

5. Describe how could microbial cells communicate each other through the way of quorum-sensing system? (10%)