Na	me:EID:	
	<ul> <li>Topic: Expanded Genetic Codes (Week 11)</li> <li>Pre-discussion questions. Answer briefly. Use only the space provided.</li> <li>1) What are the so-called 21<sup>st</sup> and 22<sup>nd</sup> natural amino acids that are found in the expanded genetic codes of certain (non-engineered) microorganisms?</li> </ul>	
1)		
2)	If you could rewrite the genetic code from scratch, how many amino acids could theoretically be encoded by a non-overlapping nucleotide triplet code? (Consider that you might need some codons for functions related to translation other than encoding amino acids.)	
3)	What are three genetic parts and/or modifications to the host organism genome that are needed to create an efficient and high-fidelity orthogonal translation system for incorporating an unnatural 21 <sup>st</sup> amino acid into the genetic code? Briefly explain the function of each one.	
4)	What is an application of adding a new amino acid to the genetic code of a microorganism? Why would you want to do it? Give an example of a chemical activity that an unnatural amino acid has that is not present in the 20 amino acids of the canonical genetic code.	