Disc 4 - How do transferases control glycan composition?

1. Consider the advantages and disadvantages of topologically restraining glycosylation to the ER/Golgi.
2. Is there a difference between physical and functional localization?
3. Describe mechanisms that determine Golgi localization of transferases.
4. What features of a transferase determines its catalytic specificity?
5. What is the difference between an inverting and a retaining transferase?
6. Does the kinetic mechanism of an enzyme play a role in determining the glycans expressed by a cell?
7. How does expression of glycosyltransferase genes play a role in translating the information carried by the genome to glycans synthesized by a cell
8. Give examples of peptide-sequence dependent glycosyltransferases.
9. Propose functions for soluble transferases generated from membrane bound enzymes.

Reading assignment
See: http://eskolab.ucsd.edu/advGlyco.shtml

Chapter 3, Essentials of Glycobiology, 2nd edition
Chapter 6, Essentials of Glycobiology, 3rd edition