Study guide 2

Lecture 3:

1. Know how cells are isolated.
2. How cells are cultured.
3. What are the advantages of 2D- and 3D- culture.
4. How protein is analyzed by using 1D and 2D gel.
5. How RNA/DNA is isolated and detected.

Lecture 4:

1. Understand the general function of membrane.
2. Cellular organelles are enclosed by different types of membrane.
3. Membrane is composed of lipid bilayer and membrane proteins, know the general characteristics, such as thickness, fluidity, etc..
4. What are the major components in lipid bilayer? What are their general structure, each type of lipid molecules has different characteristics, what are they? Give a few examples for the asymmetry of lipid and their applications.
5. How do the eukaryotic cells and prokaryotic cells adjust its membrane fluidity?
6. What types of motions the lipid molecules have? What are their characteristics?
7. How is lipid membrane assembled?
8. What is detergent, what is their property, what is CMC? How can it be used in membrane biology study?
9. What is lipid raft? How does it correlate with distinct domains of membrane with proteins in it?
10. How membrane proteins associate with lipid bilayer? What are their properties? What topology do these proteins have?
11. What is hydropathy plot, how is it used in membrane protein prediction? Is there any exceptions?
12. Know different modes of membrane protein mobility in lipid bilayer. How are the membrane proteins constrained into distinct domains.