1. How big is a typical protein molecule and how many molecules can be packed on the gate of a FET of size 90nm square?
2. How many grams of KCl do you need to dissolve in 100mL water to make a 0.1M solution.
3. How big is a cell and how many molecules does it contain if the concentration is 0.1uM
4. Define polar and non-polar? Give an example of a molecule of each kind.
5. What is the relationship between polar/non-polar and hydrophilic/hydrophobic.
6. How does the solvent properties influence the way in which a protein folds?
7. What is hydrogen bond and what is the average number of hydrogen bonds per water molecule. Draw the structure.
8. What is an amino acid and how many different types make up a protein molecules?
9. How are they categorised? Give an example from each category.
10. What is a peptide bond?
11. What is meant by primary, secondary, tertiary and quaternary structure?
12. Describe the two main secondary structures of proteins
13. What are the four different kinds of bonds that hold proteins together?
14. Why is amino acid structure so important?
15. Give an example of how protein structure function is modified by a single amino acid change
16. Describe two different functional classes of proteins. Give examples of each.