Please answer the following questions:

1) What is an injection attack? Identify 3 types and provide a description of each. (40 pts)

When program input data influences the flow of execution of the program.

1) Command injection – where the input is used in the construction of a command line that is executed by the system.
2) SQL injection – where the input is used to construct an SQL request.
3) Code injection – where the input is used code that is executed by the attacked system.

2) How can a memory leak lead to an exploit? (10 pts)

By causing service to crash and denying access to that service.

3) Identify 2 things negotiated during the SSL handshake protocol. (20 pts)

1) Encryption algorithm
2) MAC algorithm
3) Cryptographic keys

4) Draw the key components of the Internet mail architecture. (20 pts)

    MUA -> MSA -> MTA -> MTA -> MTA -> MDA -> MS -> MUA

5) What is authenticated in the DKIM system? (10 pts)

The originating domain.