Differences between TCP/IP and the OSI

7-layer model

• Number of layers

✧ TCP/IP defines only 5 layers (although these are not specifically

mentioned in the standards)

• Functions performed at a given layer

✧ In the OSI model each layer performs specific functions

✧ In TCP/IP different protocols may be defined within a layer, each

performing different functions. What is common about a set of protocols

at the same layer is that they share the same set of support protocols at

the next lower layer

• Interface between adjacent layers

✧ In the OSI model, a protocol at a given layer may be substituted by a new

one without impacting on adjacent layers

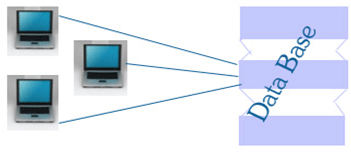
✧ In TCP/IP the strict use of all layers is not mandated

Client server have type :

2 tier & 3 tier

Two-Tier Architecture: ( from google and I add some info from doctor omar ☺:

The two-tier architecture is like client server application. The direct communication takes place between client and server. There is no intermediate between client and server.



The above figure shows the architecture of two-tier. Here the communication is one to one. Let us see the concept of two tier with real time application. For example now we have a need to save the employee details in database. The two tiers of two-tier architecture is

1. Server :such as Database server
2. Client Application :do process get info from (server)

So, in client application the client writes the program for saving the record in SQL Server and thereby saving the data in the database.

Advantages:

1. Understanding and maintenances is easier.

Disadvantages:

1. Performance will be reduced when there are more users.
2. Not perfect if the bandwidth is huge(more than 100 user is not good)
3. If I need change application and I have huge device then it is not good!

3- tier

Three tier architecture having three tier. They are

1. Client (presentation)
2. middleware server (Business logic (code))
3. Data tier (Data base)

Processing is limited in client because we add middleware server have the application

Client: Here we design the form using textbox, label etc.

Business: It is the intermediate layer which has the functions for client layer and it is used to make communication faster between client and data layer. It provides the business processes logic and the data access.

Data layer: it has the database. Example: Gmail

Advantages

1. Easy to modify with out affecting other modules
2. Fast communication
3. Performance will be good in three tier architecture.

M –tier: Ex: airplane KSA

-Client: open site from browser

-Web server :Html page and tto booking go to the application server

-Application server: booking

-Server :data base

Type networks:

1-pan : person have laptop and connect to tablet for example

2-lan :شبكه محليه مثل شبكة الجامعة like :intranet

3-man : is greater than lan such connect 2 lan

4-wan: internet

Examble :sabk have lan in KSA and LAN in UK

And connect them by :satellite,VPN

Network topology : from the link in slide

The best topology is ring topology.   
Star is the next best after ringr, and then bus, which is pretty old, but not too expensive. 

Full mesh topology is theoretically the best since every device is connected to every other device, thus maximizing speed and security. These, however, are quite expensive to install. The next best would be tree topology, which is basically a connection of stars.