Que! Difference between TCP/IP and OSI model?

Ans:- Following are the difference between TCP/IP and OSI

TCP/IP	OSI
(i) The full form of TCP/IP is transmission Control protocol/Internet Protocol	(i) The full form of OSI is open system Inter connection.
(ii) It is a communication protocol that is based on standard protocol and allow the connection of hosts over a network.	(ii) It is a structure model which deals which deals which the functioning of a network.
(iii) In 1982, the TCP/IP model became the standard language of ARPANET.	(iii) In 1984, the OSI model was introduced by the International organisation of standardization (ISO).
(iv) It follows the horizontal approach.	(iv) It follows the vertical approach.
(v) The TCP/IP is the implementation of OSI model.	(v) An OSI Model is a reference model, based on which a network is created
(vi) It is protocol dependent	(vi) It is protocol independent.
(vii) The smallest size of the OSI header is 5 bytes	(vii) The smallest size of the TCP/IP header is 20 bytes.

Que2 What do you understand by multiple access, what are the various types of multiple access protocol?

Ans Data transmission between two nodes is handled by the Data link Layer. Its primary duties include data link Layer. Its primary duties include data link control and multiple access control.

Multiple access protocols may also be classified into following:-

(i) **Random access protocol:-** All stations in the random access protocol have equal superiority, which means that no station has higher priority than any other station Depending on the status of the medium. any station may send the data.

(ii) **Control access protocol:-** In this station send the data once it has received approval from all other stations. The station under controlled access protocol exchange information to determine which station has the authority to send. In order to prevent message collisions over a shared medium, it only permits one node to send at a time. These are the three controlled access technique

(I) Token passing

(II) Polling

(III) Reservation.

III) Chanelization:- The chanelization protocol allow numerous station to access the same channel. at the same time by sharing the link's available band width according to time, frequency, and code. The three types of chanelization are:

(I) Frequency Division Access.
(II) Time Division Multiple access.
(III) Code Division Multiple access.

Que 3   Explain following with example:-
(i) Distance vector Routing
(ii) Hierarchical Routing.

Ans (i) Distance vector routing:- In DVR router. main tains a routing table. It contains only one entry for each router It contains - two parts - a prefered outing line to use for that destinatio and an estimate of time: Table are updated by the following with the neighbor's node.

Each router. known, the delay in reaching its. neighbor. Routers periodically exchanges routing table with the delay in the neighbors. It compared the delay in its local table. with the delay in the neighbor's table and cost of reaching that neighbor. It the path via neighbor has a lower cost. then the router updates its local table to forward. packets to the neighbor

Hierachical Routing:- In hierachical routing, the router are divided into region. Each router has complete details about how to route packets to destination within its own region. But its does not have any idea about the internal structure of othe regions.

In Hierachical routing, routers classified in group called region. Each router has information about routers in other region and it has no information about routers in other region. so router save record in their table. for every other region. The size of routing table increase the router cannot handle network traffic. To overcome this problem we are using Hierachical routing.

Que 4 (a) Calculate the Net ID and subnet Mask of 24.31.13.16.

(b) Calculate fallowing for IP address → 167.199.170.83

Find the no of addresses first address and last address.

Ans :- (a) 24. 31. 13. 16 this is class full.

Class – A

Network ID :- 24.0.0.0

Subnet :- 255.0.0.0

(b) $167.199.170.82/27$ this is class less.

Here $n = 27$

Therefore number of addresses is $2^{(32-n)} = 2^{(32-27)}$

$2^5 = 32$

number of addresses $= 32$,

First address = $167..199.170.64$

Last address :- $167.199.170.95$