Network Topologies :

Q1. Identify the given topology and identify how many cables and ports are required to have such network .

Ans : The given topology is ring topology.

No. of cables = Number of nodes in the ring topology.

The number of cables in the above network topology is 6.

The Total number of ports in a Ring topology = 2 \* number of nodes in topology

I.e The total number of ports in the above topology is : 12.

Q2. Traffic problem can be minimized using :

1. Star topology
2. Bus topology
3. Ring topology
4. Mesh topology (correct answer)

Star topology cannot be used since it will create a delay due to client server architecture. The load will be on the switch between all the nodes in star topology.

Bus Topology depends upon the common transmission medium, which once gets disrupted, cannot pass the data to the other nodes. It is not fault tolerant in nature.

Ring topology is unidirectional. All nodes will be involved creating more traffic and pressure on unrelated nodes.

Correct Answer : The Mesh topology is best suited for fault tolerance, hence the traffic can be minimized using Mesh Topology.

Q3. How many ports and cables are required in a 5node star topology ?

Ans : In a star topology, a single cable is connected to the switch to establish a proper connection, by the help of port which is required for the node to connect to switch.

However, the ports on the switch are required as well. Hence, for the total number of ports,

Number of nodes \* 2

OR

Number of nodes + Req. number of ports on switch

Hence the total number of ports required in a 5node star topology is 10 nodes, and the cables required for the connection are 5.