1.) A LAN is a bus-based network in which all workstations are connected to a single point.

As opposed to a WAN, which covers far larger areas and so needs a mesh network to

connect all the workstations.

2.) A MAN is setup in rings both logically and physically in order to increase redundant

circuits as opposed to a WAN which is set up in a mesh network, having each node connect to it’s neighbors only. They are similar in that both a MAN and a WAN in that they both cover large swatchs of area.

3.) Failover time is the time that it takes for a network to reroute its data in the event of a

component failing.

6.) A subnetwork is a collection stations that allow other devices to access the network,

while a WAN is the direct connections of devices in a specific way for a given function(s).

8.) A circuit-switched network has the characteristic of having a dedicated circuit, route,

created every time a connection from one node to another node is created. Also this circuit will only exist for as long as the call is being made. The advantage to a circuit-switched network is that since it has a dedicated route for information to travel from one end to the other, the exchange of information is quick from node to node along the determined path. The disadvantages though is that each dedicated circuit is only usable for one connection, and only last for as long as the interaction between the two endpoint nodes.

9.) A datagram packet-switch network has the characteristic of splitting information to be

sent into packets and each one takes, theoretically, it’s own path to the destination, meaning that there is no single path for the information to be taken. It has the advantage of being flexible in the case of congestion or downright failure of a node. The disadvantage though is that each packet is examined individually, and if the original file is quite large than time may be wasted looking at the packets.

10.) Allows data packets that are split to be sent along the same route in a network. At each

router that the packets of data have to pass through, the router is informed that it will be participating in a virtual circuit. Once the data packets are passed, the virtual circuit is discarded.

11.) A connectionless network application differs from a connection-oriented network

application by not needing to establish a route to the endpoint before the data is sent. So as data is sent the route is established as the packets move through the internet.

19.)

a.) Centralized Routing - Is when the various pieces of information for routing data

around in a network is stored in a single accessible location.

b.) Distributed Routing - Is when the pieces of routing information is stored at each

possible location in order for the routers to check the routing information every time a packet is received and needs to be sent out.

c.) Adaptive Routing - Is a dynamic technique of routing, in which the routing tables are

changed based on the current situation. For example, if there's congestion in the network new information is sent to the routing tables in order to make a new route.

20.) The two differ in the way in which they find out where the rest of the nodes are and also

the speed at which information is sent back and forth. OSPF first starts by having a router ping all possible nearby routers, and with this information each router decides what route a packet should take based on the quickest paid to a destination router. RIP on the other hand has each router build and update a table of information of every other router in a network, and exchanges info tables with neighbors in order to update the routing tables in the said router

23.) Quality of Service is the agreed upon level of service between the user the and the ISP.

That also includes the amount of bandwidth allocated to the user, and if the user goes above the agreed upon bandwidth, uses more internet than predicted, then the datastream is bottlenecked and congestion is induced.

13.) Not much can be done to protect a centralized routing network other than having another

computer backup the routing table. The thing is that the network then becomes a distributed routing.

14.) If a virtual route is lost, than a new route is quickly made by looking at the routing table

and finding the next quickest route.