



SRI VIDYA COLLEGE OF ENGG & TECH
DEPARTMENT OF ECE
CS 6551– Computer Network
UNIT III ROUTING
Two Mark Questions



1. What are network support layers?

Network support layers:

The network support layers are Physical layer, Data link layer and Network layer. These deals with electrical specifications, physical connection, transport timing and reliability.

2. What are the user support layers?

User support layers:

The user support layers are: Session layer, Presentation layer, Application layer. These allow interoperability among unrelated software system.

3. With down the relationship of IEEE Project to the OSI model?

The IEEE has subdivided the data link layer into two sub layers:

- * Logical link control (LLC)
- * Medium access control (MAC)

LLC is non-architecture specific. The MAC sub layer contains a number of distinct modules ,each carries proprietary information specific to the LAN product being used.

4. What are the functions of LLC?

The IEEE project 802 model takes the structure of an HDLC frame and divides it into 2 sets of functions. One set contains the end user portion of the HDLC frame - the logical address, control information, and data. These functions are handled by the IEEE 802.2 logical link control (LLC) protocol.

5. What are the functions of MAC?

MAC sub layer resolves the contention for the shared media. It contains synchronization, flag, flow and error control specifications necessary to move information from one place to another, as well as the physical address of the next station to receive and route a packet.

6. What are headers and trailers and how do they get added and removed?

The control data added to the beginning of a data is called headers. The control data added to the end of a data is called trailers. At the sending machine, when the message passes through the layers each layer adds the headers or trailers. At the receiving machine, each layer removes the data meant for it and passes the rest to the next layer.

7. What are the responsibilities of network layer?

The network layer is responsible for the source-to-destination delivery of packet across multiple network links. The specific responsibilities of network layer include the following:

- Logical addressing.
- Routing.

8. What is a virtual circuit?

A logical circuit made between the sending and receiving computers. The connection is made after both computers do handshaking. After the connection, all packets follow the same route and arrive in sequence.

9. What are data grams?

In datagram approach, each packet is treated independently from all others. Even when one packet represents just a place of a multipacket transmission, the network treats it although it existed alone. Packets in this technology are referred to as datagram.

10. What are the two types of implementation formats in virtual circuits?

Virtual circuit transmission is implemented in 2 formats.

- Switched virtual circuit
- Permanent virtual circuit.

11. What is meant by switched virtual circuit?

Switched virtual circuit format is comparable conceptually to dial-up line in circuit switching. In this method, a virtual circuit is created whenever it is needed and exits only for the duration of specific exchange.

12. What is meant by Permanent virtual circuit?

Permanent virtual circuits are comparable to leased lines in circuit switching. In this method, the same virtual circuit is provided between two uses on a continuous basis. The circuit is dedicated to the specific uses.

13. Define Routers.

Routers relay packets among multiple interconnected networks. They Route packets from one network to any of a number of potential destination networks on internet routers operate in the physical, data link and network layer of OSI model.

14. What is meant by hop count?

The pathway requiring the smallest number of relays, it is called hop-count routing, in which every link is considered to be of equal length and given the value one.

15. How can the routing be classified?

The routing can be classified as,

- Adaptive routing
- Non-adaptive routing.

16. What is time-to-live or packet lifetime?

As the time-to-live field is generated, each packet is marked with a lifetime, usually the number of hops that are allowed before a packet is considered lost and accordingly, destroyed. The time-to-live determines the lifetime of a packet.

17. What is meant by router?

A brouter is a single protocol or multiprotocol router that sometimes acts as a router and sometimes act as a bridge.

18. Write the keys for understanding the distance vector routing.

The three keys for understanding the algorithm are

- Knowledge about the whole networks
- Routing only to neighbors

- Information sharing at regular intervals

19. Write the keys for understanding the link state routing.

The three keys for understanding the algorithm are

- Knowledge about the neighborhood.
- Routing to all neighbors.
- Information sharing when there is a range.

20. How the packet cost referred in distance vector and link state routing?

In distance vector routing, cost refer to hop count while in case of link state routing, cost is a weighted value based on a variety of factors such as security levels, traffic or the state of the link.

21. How the routers get the information about neighbor?

A router gets its information about its neighbors by periodically sending them a short greeting packets. If the neighborhood responds to the greeting as expected, it is assumed to be alive and functioning. If it dose not, a change is assumed to have occurred and the sending router then alerts the rest of the network in its next LSP.

22. What are the four internetworking devices?

The four internetworking devices are,

- Repeaters, Bridges, Router and Gateway .

23. Define IP address.

IP address is the 3-bit number for representing a host or system in the network. One portion of the IP address indicates a networking and the other represents the host in a network.

24. What is Token Bus?

Token Bus is a physical bus that operates as a logical ring using tokens. Here stations are logically organized into a ring. A token is passed among stations. If a station wants to send data, it must wait and capture the token. Like Ethernet, station communicates via a common bus.

25. What is token passing?

Stations may attempt to send data multiple times before a transmission makes it onto a link. This redundancy may create delays of indeterminable length if the traffic is heavy. Token ring resolves this uncertainty by requiring that stations take turns sending data. Each station may transmit only during its turn and may send only one frame during each turn. The mechanism that coordinates this rotation is called token passing.

26. Define Masking?

Masking is the process that extracts the address of the physical network from an IP address.

27. What are the rules of boundary-level masking?

The rules of boundary-level masking

- The bytes in the IP address that corresponds to 255 in the mask will be repeated in the subnetwork address
- The bytes in the IP address that corresponds to 0 in the mask will change to 0 in the subnetwork address

28. What are the rules of nonboundary-level masking?

- The bytes in the IP address that corresponds to 255 in the mask will be repeated in the subnetwork address
- The bytes in the IP address that corresponds to 0 in the mask will change to 0 in the subnetwork address
- For other bytes, use the bit-wise AND operator

29. Define Gateway.

A device used to connect two separate networks that use different communication protocols.

30. What is LSP?

In link state routing, a small packet containing routing information sent by a router to all other routers by a packet called link state packet.

16 Mark Questions

1. Explain the two approaches of packet switching techniques.

Datagram approach

Virtual circuit approach

Switched virtual circuit(SVC)

Permanent virtual circuit(PVC)

Circuit - switched connection versus virtual - circuit connection

Path versus route

Dedicated versus shared

2. Explain IP addressing method.

Internet protocol (IP)

Datagram

Addressing

Classes

Dotted decimal notation

A sample internet

3. Define routing & explain distance vector routing and link state routing.

Distance vector routing

Sharing information

Routing table

Creating the table

Updating the table

Updating algorithm

Link state routing

Information sharing

Packet cost

Link state packet

Getting information about neighbors

Initialization

Link state database

4. Define bridge and explain the type of bridges.

Bridges

Types of bridges

Simple bridge

Multiport bridge

Transparent bridge

5. Explain subnetting

Subnetting

Three levels of hierarchy

Masking

Masks without subnetting

Masks with subnetting

Finding the subnetwork address

Boundary level masking

Non-boundary level masking

6. Write short notes about repeaters, routers and gateways.

Repeaters

Routers

Routing concepts

Least-cost routing

Non adaptive routing

Adaptive routing

Packet lifetime

Gateways