

UNIT-2
MOBILE INTERNET PROTOCOL AND TRANSPORT LAYER

2-MARKS

1. What is Mobile IP?

Mobile IP (or MIP) is an Internet Engineering Task Force (IETF) standard communications protocol that is designed to allow mobile device users to move from one network to another while maintaining a permanent IP address. Mobile IP for IPv4 is described in IETF RFC 5944, and extensions are defined in IETF RFC 4721.

2. List some Terminologies of Mobile IP?

- Mobile Node(MN)
- Home Network(HN)
- Home Address
- Foreign Address
- Foreign Network(FN)
- Correspondent Node(CN)
- Care of Address(COA)
- Home Agent(HA)
- Foreign Agent(FA)

3. What is Mobile Node?

A mobile node is an Internet-connected device whose location and point of attachment to the Internet may frequently be changed. This kind of node is often a cellular telephone or handheld or laptop computer, although a mobile node can also be a router.

4. What is Home Network?

Using Mobile IP (Mobile Internet Protocol), the home network is where a mobile device has its permanent IP address. With Mobile IP, a mobile device can be plugged into "foreign" networks using a temporary care-of address so that it doesn't have to be assigned a permanent IP address each time it is plugged into a foreign network. The care-of address allows the device to be located when it is not plugged into its home network.

5. What is Care-of-Address?

Used in Internet routing, a **care-of address** (usually referred to as *CoA*) is a temporary IP address for a mobile device. This allows a home agent to forward messages to the mobile device. A separate address is required because the IP address of the device that is used as host identification is topologically incorrect - it does not match the network of attachment. The care-of address splits the dual nature of an IP address, that is, its use is to identify the host and the location within the global IP network.

6. What is Agent discovery?

When a mobile node is first turned on, it cannot assume that it is still “at home” the way normal IP devices do. It must first determine where it is, and if it is not at home, begin the process of setting up datagram forwarding from its home network. This process is accomplished by communicating with a local router serving as an agent, through the process called *agent discovery*.

7. List some methods available for agent discovery.

- Agent advertisement
- Agent solicitation
- Tunnelling
- Encapsulation
- Packet Delivery

8. What is Agent solicitation?

Mobility agents transmit agent advertisements to advertise their services on a network. In the absence of agent advertisements, a mobile node can solicit advertisements. This is known as agent solicitation.

9. What is Tunnelling?

Tunneling is a protocol that allows for the secure movement of data from one network to another. Tunneling involves allowing private network communications to be sent across a public network, such as the Internet, through a process called encapsulation. The encapsulation process allows for data packets to appear as though they are of a public nature to a public network when they are actually private data packets, allowing them to pass through unnoticed.

10. List some features of Mobile IP?

- Transparency
- Compatibility
- Security
- Efficiency and Scalability

11. What is Encapsulation?

The default encapsulation process used in Mobile IP is called *IP Encapsulation Within IP*, defined in RFC 2003 and commonly abbreviated *IP-in-IP*. It is a relatively simple method that describes how to take an IP datagram and make it the payload of another IP datagram. In Mobile IP, the new headers specify how to send the encapsulated datagram to the mobile node's care-of address.

12. What is TCP/IP?

TCP/IP (Transmission Control Protocol/Internet Protocol) is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet). When you are set up with direct access to the Internet, your computer is provided with a copy of the TCP/IP program just as every other computer that you may send messages to or get information from also has a copy of TCP/IP.

13. What is SMTP?

Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (email) transmission. First defined by RFC 821 in 1982, it was last updated in 2008 with the Extended SMTP additions by RFC 5321—which is the protocol in widespread use today. SMTP by default uses TCP port 25.

14. What is SNMP?

Simple Network Management Protocol (SNMP) is a popular protocol for network management. It is used for collecting information from, and configuring, network devices, such as servers, printers, hubs, switches, and routers on an Internet Protocol (IP) network.

15. What is MIME?

MIME (Multipurpose Internet Mail Extensions) is an extension of the original Internet e-mail protocol that lets people use the protocol to exchange different kinds of data files on the Internet: audio, video, images, application programs, and other kinds, as well as the ASCII text handled in the original protocol, the Simple Mail Transport Protocol (SMTP).

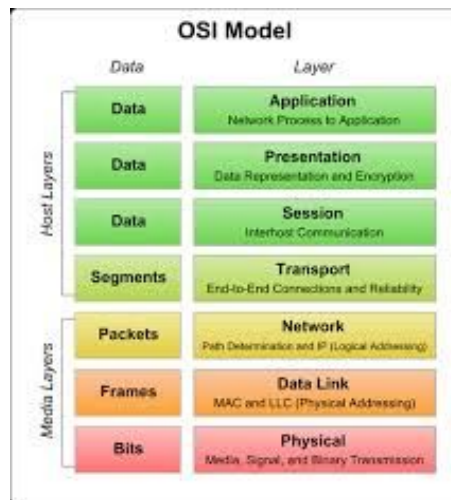
16. What is ARP/RARP?

The host on the network that has the IP address in the request then replies with its physical hardware address. There is also Reverse ARP (RARP) which can be used by a host to discover its IP address.

17. Draw Architecture of TCP/IP.

Application Layer
Transport Layer
Internet Layer
Network Access Layer

18. Draw OSI Model architecture.



19. What is slow start?

Slow-start is part of the congestion control strategy used by TCP, the data transmission protocol used by many Internet applications. Slow-start is used in conjunction with other algorithms to avoid sending more data than the network is capable of transmitting, that is, to avoid causing network congestion.

20. What is DNS?

Short for **D**omain **N**ame **S**ystem (or **S**ervice or **S**erver), an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses. Every time you use a domain name, therefore, a DNS service must translate the name into the corresponding IP address. For example, the domain name `www.example.com` might translate to `198.105.232.4`.

21. What is Flow Control in TCP/IP?

Flow control is the management of data flow between computers or devices or between nodes in a network so that the data can be handled at an efficient pace. Too much data arriving before a device can handle it causes data overflow, meaning the data is either lost or must be retransmitted.

22. What are all the improvement techniques in Mobile TCP?

- a. Indirect TCP (I-TCP).
- b. Fast Retransmission.
- c. Snooping TCP (S-TCP).
- d. Mobile TCP (M-TCP).
- e. Freeze - TCP.