

Question No: 51 (Marks: 2)

How can we prove that we have 2,147,483,648 addresses in class A?

Answer: - rep

Question No: 52 (Marks: 2)

Why is internet multicast routing difficult?

Answer: - rep

Question No: 53 (Marks: 2)

Define what is the Extension Headers in IPv6.

Answer: - rep

Question No: 54 (Marks: 3)

How does IP software reassemble fragments that arrive out of order?

Answer:- (CS610 ref.Book Page 323)

When a packet is fragmented, the fragments must be numbered in such a way that the original data stream can be reconstructed. One way of numbering the fragments is to use a tree. If packet 0 must be split up, the pieces are called 0.0, 0.1, 0.2, etc. If these fragments themselves must be fragmented later on, the pieces are numbered 0.0.0, 0.0.1, 0.0.2. . . 0.1.0, 0.1.1, 0.1.2, etc. If enough fields have been reserved in the header for the worst case and no duplicates are generated anywhere, this scheme is sufficient to ensure that all the pieces can be correctly reassembled at the destination, no matter what order they arrive in.

Question No: 55 (Marks: 3)

What is the first address in the block if one of the addresses is 167.199.170.82/27?

Answer: - [Click here for detail](#)

Address in binary: 10100111110001111010101001010010

Keep the left 27 bits: 10100111110001111010101001000000

Result in CIDR notation: 167.199.170.64/27

Question No: 56 (Marks: 3)

In internet routing how does a host join or leave a group?

Answer: - rep

Question No: 57 (Marks: 5)

Answer:- rep

Question No: 58 (Marks: 5)

Write a note on Address Resolution.

Answer:- (Page 93)

Mapping between a protocol address and a hardware address is called Address Resolution. A host or router uses address resolution when it needs to send a packet to another computer on the same physical network. A computer never resolves the address of a computer that attaches to a remote network.

In the figure below a simple Internet with routers R1 & R2 connecting three physical networks is shown each network has two host computers attached.

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Question No: 21 (Marks: 2)

Is there a comparison between TCP/IP reference model and ISO reference model?

Answer:- [Click here for detail](#)

The main differences between the two models are as follows:

TCP/IP combines the presentation and session layer issues into its application layer.

TCP/IP combines the OSI data link and physical layers into the network access layer.

TCP/IP appears to be a simpler model and this is mainly due to the fact that it has fewer layers.

Question No: 22 (Marks: 2)

Does OSPF only share information within an area or does it allow communication between areas?

Answer:- rep

Question No: 23 (Marks: 2)

What are the implementations of Network Address Translation?

Answer:- rep

Question No: 24 (Marks: 3)

Describe the difference between static and dynamic routing?

Answer:- rep

Question No: 25 (Marks: 3)

What is the first address in the block if one of the addresses is 140.120.84.24/20?

Answer:-

The first address is 140.120.80.0/20

Question No: 26 (Marks: 3)

Write three new features of IPV6.

Answer:- (Page 111)

- IPV6 addresses are 128 bits.
- Header format is entirely different.
- Additional information is stored in optional extension headers, followed by data.
- Flow label and quality of service allows audio and video applications to establish appropriate connections.
- New features can be added more easily. So it is extensible.

Question No: 27 (Marks: 5)

What is the difference between an interior gateway protocol and an exterior gateway protocol? Name an example of each.

Answer:- rep

Question No: 28 (Marks: 5)

As the Internet grew, the original Classful addressing scheme became a limitation, what is was the designed solution.

Answer:- rep

Question No: 29 (Marks: 5)

What is IPv6 ADDRESS NOTATION?

Answer:- rep

Question No: 30 (Marks: 10)

LIST SOME CHARACTERISTICS OF A CLIENT.

Answer:- (Page 145)

CHARACTERISTICS OF A CLIENT:

The characteristics of a client are explained below:

- ❖ "Client is an arbitrary application program.
- ❖ "It becomes client temporarily.
- ❖ "It can also perform other computations.
- ❖ "It is invoked directly by the user.
- ❖ "It runs locally on the user's computer.
- ❖ "It actively initiates contact with a server.
- ❖ "It contacts one server at a time.

Question No: 21 (Marks:2)

Is there a comparison between TCP/IP reference model and OSI reference model?

Answer:- rep

Question No: 22 (Marks:2)

How can a datagram be transmitted across a physical network that does not understand the datagram format?

Answer:- rep

Question No: 23 (Marks:2)

What is the basic concept of Twice NAT (Network Address Translation)?

Answer:- rep

Question No: 24 (Marks:3)

What format is used for an internet packet?

Answer:- (CS610 ref.Book Page 37)

The internet layer defines an official packet format and protocol called IP (Internet Protocol). The job of the internet layer is to deliver IP packets where they are supposed to go.

Question No: 25 (Marks:3)

“To achieve a hierarchy, OSPF allows an autonomous system to be partitioned for routing purposes”. Does this feature make OSPF more complex or powerful?

Answer:- [Click here for detail](#)

OSPF allows an autonomous system to be partitioned for routing purposes which make it complex but More powerful.

Question No: 26 (Marks:3)

Why does IPv6 use separate Extension Headers?

Answer:- (Page 113)

IPv6 use separate Extension Headers. Fragmentation information is kept in separate extension header. Each fragment has base header and (inserted) fragmentation header. Entire datagram including original header may be fragmented.

Question No: 27 (Marks:5)

Consider the IP addresses: 178.200.127.5 and the corresponding subnet masks 255.255.255.0, then find out the following:

- a. The number of bits used for subnetting
- b. Total number of host in the subnet
- c. The network address of the subnet
- d. The subnet address of the IP address.

Answer:- [Click here for detail](#)

a. The number of bits used for subnetting

Answer

8 bits

b. Total number of host in the subnet

Answer

254

c. The network address of the subnet.

Answer

178.200.127.0

Question No: 28 (Marks:5)

How does IP software reassemble fragments that arrive out of order?

Answer:- [rep](#)

Question No: 29 (Marks:5)

Write down the comparison of Distance- vector and Link – state algorithm?

Answer:- [\(Page 64\)](#)

COMPARISON:

DISTANCE-VECTOR ROUTING:

- It is very simple to implement.
- Packet switch updates its own routing table first.
- **It is used in RIP.**

LINK-STATE ALGORITHM:

- It is much more complex.
- Switches perform independent computations.
- It is used in OSPF.

Question No: 30 (Marks:10)

Describe in detail what is the purpose of the following table? What sort of information can be extracted?

First Four Bits Of address	Table index in decimal	Class of Address
0000	0	A
0001	1	A
0010	2	A
0011	3	A
0100	4	A
0101	5	A
0110	6	A

0111	7	A
1000	8	B
1001	9	B
1010	10	B
1011	11	B
1100	12	C
1101	13	C
1110	14	D
1111	15	E

Answer:- (Page 87)

Whenever it handles a packet, IP software needs to separate the destination address into a prefix and suffix. Classful IP addresses are self-identifying because the class of the address can be computed from the address itself. The table shows in the figure above how the class of address can be computed.

Question No: 31 (Marks: 10)

List down and describe at least five characteristics of Routing Information Protocol.

Answer:- (Page 138)

ROUTING INFORMATION PROTOCOL (RIP):

It has the following characteristics:

"It is used for routing within an autonomous system (IGP).

"It uses UDP for all message transmissions.

"It can be used to advertise default route propagation. An organization can use RIP to install a default route in each router.

"It uses distance vector algorithm.

"RIP allows hosts to listen passively and update its routing table.