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### **Top 50+ | Most Important Computer Network Interview Questions.**

Computer Network Interview Questions, Are you preparing for a service-based or a product based IT company?

Then the interviewer will always check Your Computer Network knowledge that you have gained during your academics.

That is why it is important to know what types of questions are asked with respect to Computer Networks and thus prepare well to crack any sort of Interview.

Below is the List of Most important Networking Questions.

#### **Computer Network Interview Questions**

**1. What do you mean by computer networks?**

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## Most Important Computer Network Interview Questions

Computer networks are the interconnection of two or more computers to provide a medium to exchange information with each other.

The connection between two computers can be done via cabling, most commonly ethernet or wirelessly through radio waves.

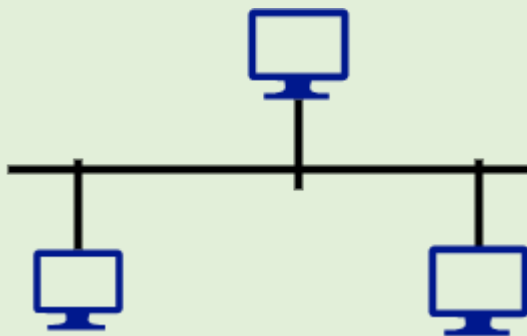
### **2. What do you mean by network topology?**

Network topology is a geographical representation of all the connected devices example computers, Mobile, etc. It simply means the technique used for connecting different computers together.

### **3. Enlist the different types of Topology?**

- Bus Topology.
- Ring Topology.
- Star Topology.
- Mesh Topology.
- Tree Topology.

### **4. Explain Bus Topology?**



Bus topology is the cheapest and easiest way of connecting computer to form Local Area Network(LAN).

In Bus Topology, All computers are connected to the single central cable, Which is called as bus.

It is effective when we want to connect less than 10 computers together as if one node (computer) fails entire system fails.

### **5. Explain Ring topology?**

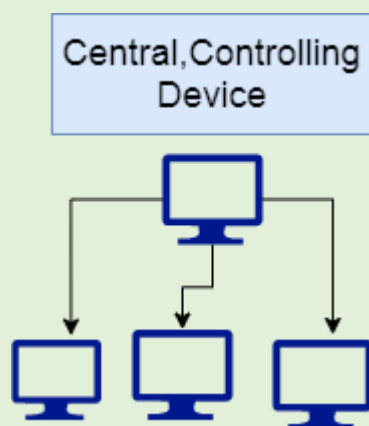
## Most Important Computer Network Interview Questions

Ring topology is the topology in which each and every computer or node connects to its adjacent next computer thus forming a ring-like structure.

It is effective if the network size is less than 10 computers.

If one node or computer fails entire network fails.

### **6. Explain Star Topology?**



Star topology is the topology in which all the computers or nodes connects to the central controlling system. This Central controlling system manages all the computers connected to it.

This Central Controlling system can be Switch or Hub.

Suppose if a Node A needs to send data to Node B, Firstly Node A send data to Switch/Hub (central Controlling System) and this Switch will send data to Node B.

### **7. What is Mesh topology?**

Mesh Topology is a type of network where all the nodes computers are connected to each other(each and every nodes is connected to each other) and is a complete network.

It means that each device in mesh topology has a dedicated point-to-point link to every other device.

In this network if one node fails the entire network will not fails.

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### **8. What is tree topology?**

A tree topology is a combination of Bus and Star Topology means it combines the characteristics of linear bus and star topologies. It is a variation of star topology.

Consider network-1 made using star topology and network-2 made using bus topology and if we connect both the networks using hub/switch the resultant network will be in tree topology.

### **9. Difference between Star and Bus topology?**

<b>Star topology</b>	<b>Bus topology</b>
Adding a new Computer is easy.	Adding a new Computer is difficult.
Failure of the central controlling system results in the failure of the complete network.	If one computer fails entire network also fails.
Hub or switch is used to connect computers	Bus (cable) is used to connect computers.

### **10. difference between Mesh and Tree topology?**

<b>Mesh topology</b>	<b>Tree topology</b>
Mesh Topology is suitable for a small networks.	Tree topology is suitable for a large network.
In tree topology each node is connects to every other node in the network.	In Tree topology the resultant network is a tree-like structure.
Fault diagnosis is easy.	Fault diagnosis is not easy.

### **11. What is Network connecting devices?**

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In networks, Many computers are connected to one another or the internet. For such connection we need to use connecting devices. These connecting devices are called as network connecting devices/

### **13. Describe network connecting devices- Hub Switch and Routers?**

- **Hub-** Hub is a network connecting device, which connects multiple computers in a star topology. Basically a Hub is a multi-port repeater.
- **Switch-** Switch is a device that forwards each incoming packet/data only to the port that provides access to the destination system.
- **Routers-** Router is a network connecting device that connects two or more networks.

### **14. What is OSI Model?**

OSI- Open System Interconnection, it is theoretical model which describes how different applications will communicate to each other over computer network.

### **15. Explain different Layers of OSI Model?**

The different layers of OSI model are:

Layer	Description
Physical Layer	Physical Layer converts data bit obtained by datalink-layer to electric signals.
Datalink Layer	Data packets are encoded into bits by the data link layer. The main function by DDL is error detection and control.
Network Layer	It transfer datagram from one layer to another.
Transport Layer	The transport layer ensures the data units are delivered error-free, in sequence, with no losses or duplications.
Session Layer	It manages and controls signals between computers.
Presentation	It transforms data into application layer format.

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Layer	Description
Layer	
Application Layer	The Application layer provides standard interfaces for peer-peer application interaction.

### 16. What is TCP/IP Reference Model?

TCP/IP stands for transmission control protocol and Internet Protocol. It is a reference model that describes how data will be transmits from one end to other end.

### 17. Explain Different Layers of TCP/IP Protocol?

Following are the layers of TCP/IP:-

1. Application Layer.
2. Transport Layer.
3. Internet Layer.
4. Host-to-Network Layer.

**Host-to-Network Layer-** This layer performs all the functions of the physical layer and data link layer of the OSI model.

**Internet Layer-** The Internet Layer is exactly equal to the network layer of the OSI model. Internet Protocol is the primary protocol operating at this layer.

It provides data encapsulation, routing, addressing services to above transport layer.

**Transport Layer-** The Transport Layer is same as Transport layer of the OSI model. In this layer two protocol works:

1. TCP/IP- Transmission Control Protocol.
2. UDP- User Datagram Protocol.

These two protocol provides connection-oriented and connectionless data transfer services.

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**Application Layer-** It allow users a standard interface to interacts with the applications.

Suppose if we are interacting with our friends using Facebook, it is possible because of the application layer.

### **18. Difference between connection-oriented and connectionless protocol?**

#### **Connection-oriented Protocol:-**

1. It is a communication service in which virtual connection is made prior to sending data packets over the Internet.
2. Requires authentication of the destination system prior to transferring the data.
3. It is more reliable.
4. Connection-oriented protocol is slow when we compare it with connectionless.
5. Example-Transmission control protocol.

#### **Connectionless Protocol:-**

1. In this service data packets are send without creating any virtual connection over the Internet.
2. It Requires authentication of the destination system prior to transferring the data.
3. This is more reliable.
4. Faster when we compare it with connection-oriented.
5. Example-User datagram protocol

### **19. Difference between TCP and UDP?**

#### **Transmission Control Protocol-**

1. TCP is a connection-oriented protocol.
2. In TCP, data is sent by application with no particular structure, which means it is stream-based.
3. Transmission speed is less than UDP.
4. FTP, Telnet, SMTP, DNS, HTTP, POP, IMAP, BGP are some protocol resides within TCP.

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### **User Datagram Protocol-**

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### **21. What is File Transfer protocol(FTP), Explain it?**

File Transfer Protocol is the standard mechanism by TCP/IP for copying files from one host to another. Whenever we download or share any file over Internet FTP protocol is used

### **22. Explain Telnet?**

Telnet is a network protocol used to remote access the other system. It is used to virtually access a computer system and it also provide way a to communicate between them.

### **23. Explain Simple Mail Transfer Protocol?**



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It stands for simple mail transfer protocol, used for sending emails message between servers. It is generally used to send message from mail client to mail server.

### **24. What is HTTP? Explain it**

It stands for Hyper Text Transfer Protocol, if we want to communicate with web servers it is done by sending HTTP Requests and receiving HTTP response from web servers

### **25.Explain POP and POP3?**

POP- it stands for Post Office Protocol, it is used to fetch your e-mail from mail server.

POP3- It is most recent version of post office protocol for receiving mail.

In this we login into system, POP download your mail, Once we read those message that messages are automatically deleted.

### **26. Describe IMAP?**

Internet Message Access Protocol is used to access your mail, In this we does not download the mail we simply see the copy of it, we can login multiple time and can see all stored mail whenever and wherever we want.

### **27. Explain in brief BOOTP?**

BOOTP(Bootstrap Protocol), allow a network user to automatically configure(receive an IP address) and have an operating system booted withou anyt user involvement.

### **28. Describe DHCP?**

Dynamics Host Configuration Protocol is a network server that automatically provides and assigns IP addresses, default gateways, and other network parameters to clients' devices.

### **29 Explain RIP Protocol?**

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Routing Information Protocol is dynamic routing protocol used to find best path between source and destination.

### **30. What is Firewall and Enlist Its Types?**

Firewall is network security device that monitors incoming and outgoing network traffic and allow only authentic data and block others.

### **31. What is SNMP?**

Simple Network Management Protocol is an internet Standard protocol for collecting and organizing information about devices.

### **32. What is Data Encapsulation?**

It is process in which we add header and footer to the data packets.

### **33. What is the function of ARP protocol?**

Address resolution protocol, it is used to find MAC address of given machine using IP address.

### **34. Explain RARP Protocol?**

Reverse Address Resolution Protocol, In the local area network a physical machine can request for its IP address from the gateway using this protocol.

### **35. What is ICMP?**

Internet Control Message Protocol is an error/problem reporting and broadcasting protocol. Whenever any error occurs this protocol is used to generate error messages.

### **36. Explain VPN?**

Virtual private networks, allow us to create a secure connection to another network over the Internet.

### **37. Explain Proxy Server?**

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It acts as a gateway/intermediate between you and the internet. It is a server that hides or separates users from the websites they browse.

### **38. Difference between POP3 and IMAP?**

<b>POP3</b>	<b>IMAP</b>
It is a simple protocol that only allows downloading messages from your inbox to a local computer.	It is a more advanced protocol used to see a message in your Inbox whenever and wherever you want.
POP3 listens on port no-110	It listens on port no-143
To read mail it must be downloaded first.	Mail contents can be read partially before downloading.

### **39. difference between SMTP and POP3?**

<b>SMTP</b>	<b>POP3</b>
It stands for simple mail transfer protocol.	It stands for Post Office Protocol version-3.
SMTP is used for sending messages.	POP3 is used for accessing messages.
Works on port number-25.	Works on port number-110.
Also called as PUSH protocol.	Also called as POP protocol.

### **40. What is Multiplexing?**

Multiplexing is the set of techniques that allows the simultaneous transmission of multiple signals across a single data link.

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### **41. Name the categories of Multiplexing?**

- a. Frequency Division Multiplexing (FDM)
- b. Time Division Multiplexing (TDM)
  - i. Synchronous TDM
  - ii. A Synchronous TDM Or Statistical TDM.
- c. Wave Division Multiplexing (WDM)

### **42. What is FDM?**

FDM is an analog technique that can be applied when the bandwidth of a link is greater than the combined bandwidths of the signals to be transmitted.

### **43. What is WDM?**

WDM is conceptually the same as FDM, except that the multiplexing and demultiplexing involve light signals transmitted through fiber optics channel.

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### **44. What is TDM?**

TDM is a digital process that can be applied when the data rate capacity of the transmission medium is greater than the data rate required by the sending and receiving devices.

### **45. What is Synchronous TDM?**

In STDM, the multiplexer allocates exactly the same time slot to each device at all times, whether or not a device has anything to transmit.

### **46. What is Fixed Size Framing?**

In fixed-size framing, there is no need for defining the boundaries of the frames. The size itself can be used as a delimiter.

### **47. Define Character Stuffing?**

In byte stuffing (or character stuffing), a special byte is added to the data section of the frame when there is a character with the same pattern as the flag. The data section is stuffed with an extra byte. This byte is usually called the escape character (ESC), which has a predefined bit pattern. Whenever the receiver encounters the ESC character, it

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removes it from the data section and treats the next character as data, not a delimiting flag.

### **48. What is Bit Stuffing?**

Bit stuffing is the process of adding one extra 0 whenever five consecutive 1s follow a 0 in the data, so that the receiver does not mistake the pattern 0111110 for a flag.

### **49. What is Flow Control?**

Flow control refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.

### **50. What is Error Control ?**

Error control is both error detection and error correction. It allows the receiver to inform the sender of any frames lost or damaged in transmission and coordinates the retransmission of those frames by the sender. In the data link layer, the term error control refers primarily to methods of error detection and retransmission.

### **51. What Automatic Repeat Request (ARQ)?**

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transmission and coordinates the retransmission of those frames by the sender. In the data link layer, the term error control refers primarily to methods of error detection and retransmission. Error control in the data link layer is often implemented simply: Any time an error is detected in an exchange, specified frames are retransmitted. This process is called automatic repeat request (ARQ).

### **52. What is Stop-and-Wait Protocol?**

In Stop and wait protocol, sender sends one frame, waits until it receives confirmation from the receiver (okay to go ahead), and then sends the next frame.

### **53. What is Stop-and-Wait Automatic Repeat Request?**

Error correction in Stop-and-Wait ARQ is done by keeping a copy of the sent frame and retransmitting of the frame when the timer expires.

### **54. What is usage of Sequence Number in Reliable Transmission?**

The protocol specifies that frames need to be numbered. This is done by using sequence numbers. A field is added to the data frame to hold the sequence number of that frame. Since we want to minimize the frame size, the smallest range that provides unambiguous communication. The sequence numbers can wrap around.

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### **67. What is Pipelining ?**

In networking and in other areas, a task is often begun before the previous task has ended. This is known as pipelining.

### **55. What is Sliding Window?**

The sliding window is an abstract concept that defines the range of sequence numbers that is the concern of the sender and receiver. In other words, the sender and receiver need to deal with only part of the possible sequence numbers.

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