

Final Term

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Q.1 :- How would you be describing between the Phases of a VC network?
Design a supporting diagram to explain.

(Ans). ⇒ Phases of a VC network :-

A). VC Setup :

- ⇒ In this phase, the sending transport layer connects the network layer, specifies the receiver's address and waits for the network to setup the VC.
- ⇒ The network layer determines the path between sender and receiver means the series of links and routers.
- ⇒ The network layer also determines the VC number for each link along the path.
- ⇒ Network layer also adds an entry in the forwarding table in each router along the path.
- ⇒ In VC Setup, the network layer may also reserve the resources, for example bandwidth, along the path of VC.

B). DATA TRANSFER :

⇒ After the VC has been established, Packets now can flow along VC.

C). VC TEARDOWN :

⇒ When the sender or receiver informs the network layer to terminate VC, the VC teardown will be initiated.

⇒ The network layer will then typically inform the end system on the other side of the network of the termination and update the forwarding tables in each router on the path that the VC no longer exists.

⇒ The messages that the end system into network to initiates or terminate a VC, and the messages passed between the routers to setup the VC.

⇒ The protocols used to exchange these messages are called "signaling protocols".

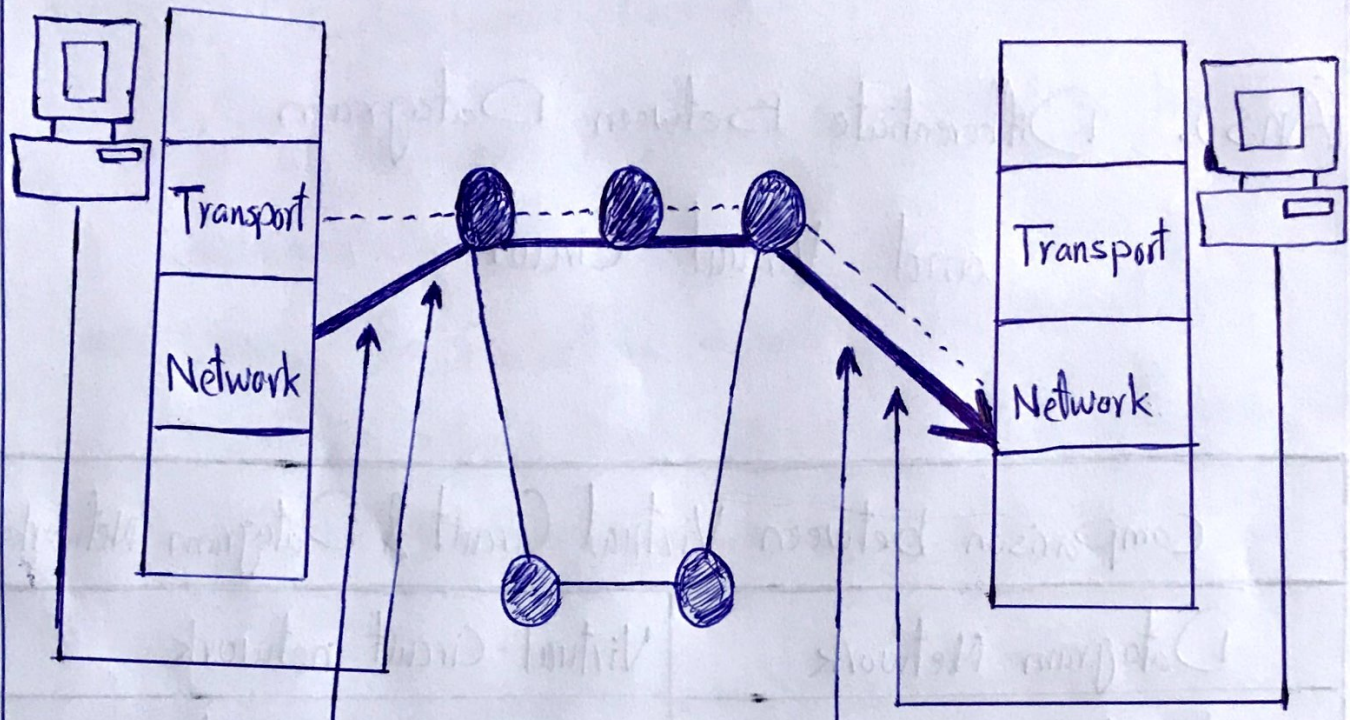
Q2. PART a).

Design a table to differentiate between Datagram and VC ?

(Ans). Differentiate Between Datagram and Virtual Circuit

Comparison between Virtual Circuit & Datagram Networks	
Datagram Network	Virtual-Circuit network
Circuit Setup not needed	Circuit setup required
Each Packet Contains the full Source and destination address	Each Packet Contains a short VC number
Routers do not hold state information about some connections	Each VC required routers table space per connection
Each Packet is routed independently	Router chosen when VC setup; all packets follow it.
None, except for packets lost during crash	All VCs that passed through the failed router are terminated
Quality of Service difficult	Easy if enough resources can be allocated in advance for each VC
Congestion control difficult	Easy if enough resources can be allocated in advance for each VC

→ VC Supporting diagram →



1. Initiate Call

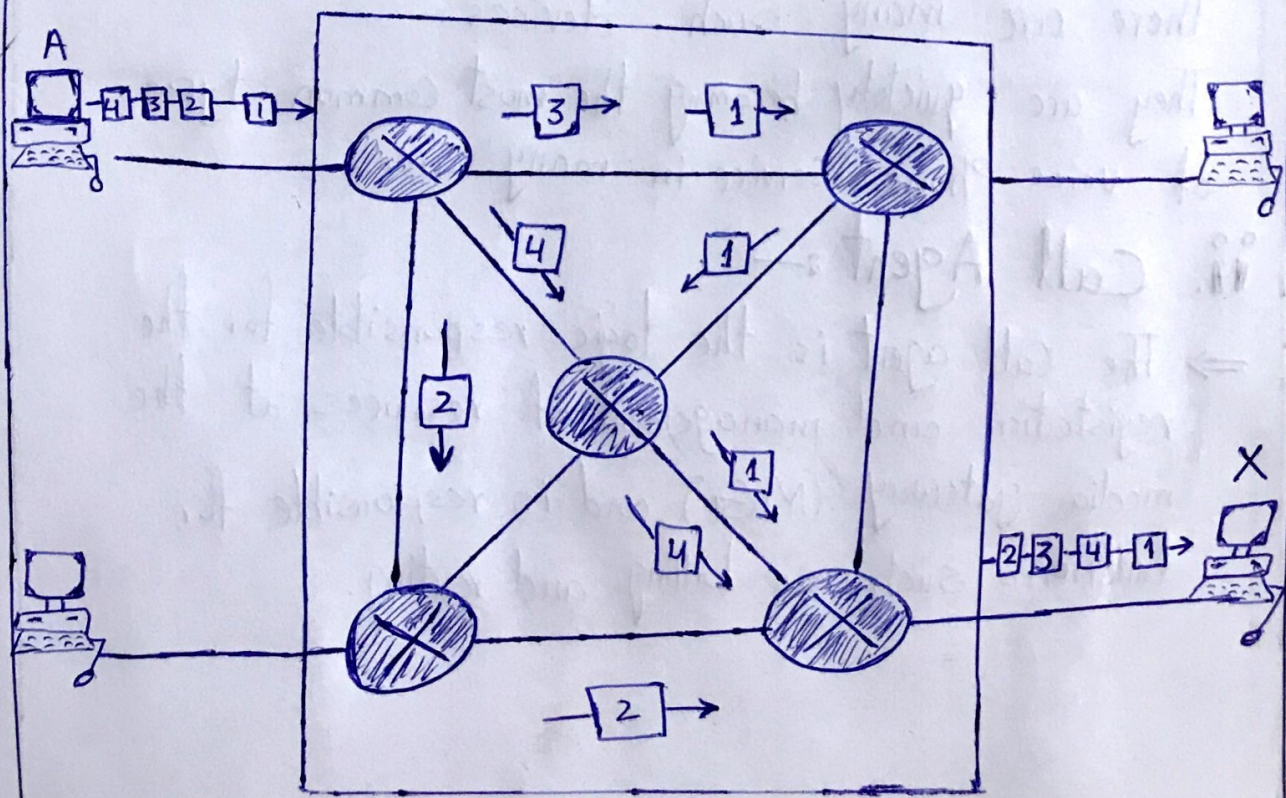
2. Incoming Call

Q2 PART. b). Design a diagram to elaborate an ideal datagram network ?

(Ans). Datagram Networks

- ⇒ In a datagram network, each packet is treated independently of all others.
- ⇒ Even if a packet is a part of a multipacket transmission network treats it as though it existed alone.
- ⇒ Packets in this approach are referred to as datagrams.
- ⇒ Datagram switching is normally done at the network layer.

Datagram network



Q.3 PART. a). Explain the following briefly?

- i. Gateways
- ii. Call Agent and application Server
- iii. Latency in VOIP.

(Ans).

i. Gateways :-

⇒ A VOIP gateway is a gateway device that uses Internet Protocols to transmit and receive voice communications.

The general term is ambiguous and can mean many different things.

There are many such devices.

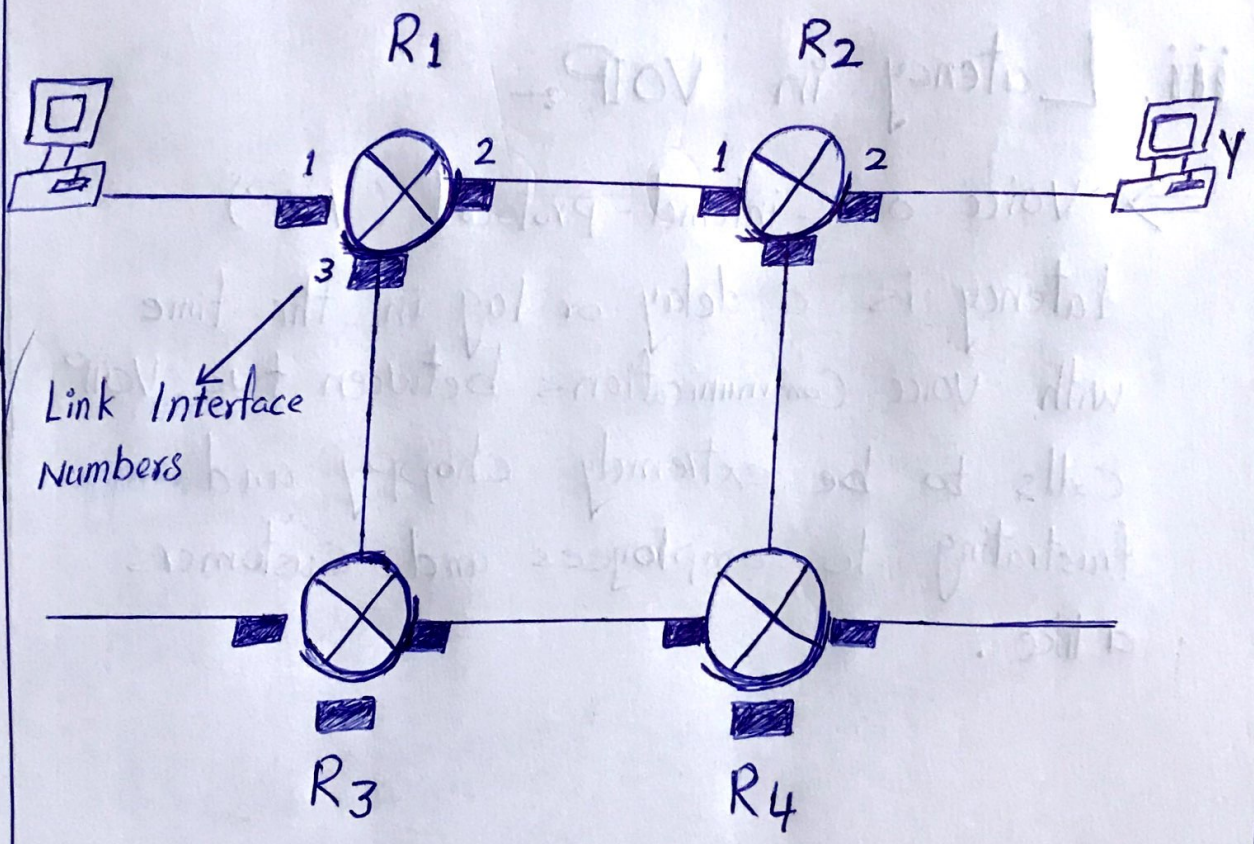
They are quickly becoming the most common type of voice phone service in many areas.

ii. Call Agent :-

⇒ The call agent is the logic responsible for the registration and management of resources at the media gateway (MG) and is responsible for functions such as billing and routing.

Q3 PART. b). Design a Pictorial representation of VC network?

(Ans). Pictorial representation of VC network:



= Application Servers

An application Server is the architectural Component of a next generation VoIP or Unified Communications network that enables enhanced user features.

The term is most commonly associated with Communications Service Provider networks.

iii. Latency in VoIP:-

⇒ Voice-over-internet-protocol (VoIP)

Latency is a delay or lag in the time with voice communications between two VoIP calls to be extremely choppy and frustrating to employees and customers alike.

Q.4 Fill in the Blanks ?

- (a). Datagram provides a Connectionless Communication Services.
- (b). Datagram doesn't need Guaranteed setup.
- (c). Circuit setup is required in VC ^{virtual} Circuit Network.
- (d). Routers do not hold State information about Connection in Datagrams.
- (e). Congestion control is easy in VC networks.
- (f). The IP phone plugs directly into the Internet.
- (g). MCU stand for Multipoint Control Unit.
- (h). A Application Server is the Architectural of a Next-Gen VoIP.
- (i). VC Networks are a type of Connectionless.
- (j). Billing and Routing is responsibility of Call Agent.

- (K). Video Conference means to conduct conference between two or more participants.
- (L). VOIP Latency is a Delay in the time with Voice Communications.
- (m). Packet loss means that the data packets travelling across a network don't reach destination.
- (n). Call Hijacking is an issue related with Security, Phishing.
- (o). A gatekeeper is a management tool for H.323 multimedia network.
- (P). Datagram Networks are a type of Connectionless networks.
- (q). An entry is added in Forwarding table when a new VC is established.
- (r). There are Three (3) Phases in VC networks.
- (s). The protocols used to send messages are called Jitter.
- (t). VC Teardown occurs after Sender and receiver informs the network layer to terminate.