Unit-2

1. What is VCI? What are the phases in virtual circuit switching?
=) VCI stands for "Virtual channel Identifier". A VCI distinguishes virtual channels created in a packet/cell switched network. A VCI has multiple circuits per communication channel & is primarily used for managing the unique identification of each created circuit. A VCI is also known as a virtual circuit identifier (VCI).

The phases in virtual circuit switching are:-
As in circuit-switching n/w, a source & destination need to go through three phases in virtual-circuit n/w : setup, data transfer & teardown

~~In setup phase, setup request in a virtual circuit network~~
→ ~~Ia~~

2. Define global addressing. Explain how permanent virtual circuit & switched virtual circuit works.
→ Global addressing is any address that appears on the outside portion of the network. A source and/or a destination need to have a global address that can be unique in the scope of the n/w or internationally.

In permanent virtual circuit, switches are set up & configured by the telco or carrier to provide a permanent, point-to-point connection between the two nodes. The telco dedicates specific switches which cannot be used by anyone else as long as you lease the service.

Switched virtuit circuit provides temporary, point-to-point connection between the two nodes. SVC offer the advantage of band-width on demand but suffer from some latency in ca-width on demand but suffer from some latency in ca-tablishing a connection. SVC connection viz. call setup, data transfer, idle & call termination.

3. Differentiate between datagram n/w & virtual circuit n/w?

Datagram N/W	Virtual circuit n/w
i) It is connection less service	It is connection-oriented.
ii) All packets are free to use any available paths	Packets follow the same path for connection time
iii) It is not reliable conne-ction	It is reliable connection
iv) Data packets are not transferred in order	Data packets are received in order.
v) It is generally used by the IP n/w	It is used by the ATM.

4. Do the routers in both datagram n/w & virtual circuit n/w are forwarding tables? If so, describes the forwarding table for both classes of n/w.

➔ Yes, they both use forwarding tables.
The forwarding table in a vc n/w has incoming inter-face, incoming vc number, outgoing interface, outgo-ing vc number.
For a datagram n/w: Destination address, outgoing interface.

5. What are the various duties of N/w layer? Explain each of them.

→) The various duties of n/w layers are :-

i) N/w layers are responsible for end to end delivery of packets.

ii) segments are encapsulated.

iii) Provides logical addressing that routers use for path deter-mination

iv. Determines best path for packet forwarding

v. fragmentation is performed.