IMPORTANT TOPICS

UNIT-IV

1) Comparison and differences between IPv4 and IPv6.
2) IPv6 base header format and extension headers.
3) Various Routing protocols of IPV6.
4) Three levels of hierarchy of global unicast address.
5) Three levels of hierarchy of global unicast.
6) An IPv6 packet consists of the base header and a TCP segment. The length of data is 320 bytes. Show the packet and enter a value for each field.
7) NAT working operation.

8) Show abbreviations for the following addresses:

   a. 0000:0000:FFFF:0000:0000:0000:0000:0000

   b. 1234:2346:0000:0000:0000:0000:0000:1111

   c. 0000:0001:0000:0000:0000:0000:1200:1000

9) Decompress the following addresses and show the complete unabbreviated IPv6 address:

   a. **1111::2222**

   b. **::**

   c. **0:1::**

   d. **AAAA:A:AA::1234**

10) Assume a host with Ethernet address (F5-A9-23-11-9B-E2)16 has joined the network. What would be its global unicast address if the global unicast prefix of the organization is **3A21:1216:2165** and the subnet identifier is **A245:1232**.

UNIT-V

1) DSL cable and modulation methods
2) Frame relay architecture and Frame Call Control.
3) HDLC protocol and its frames
4) ATM protocol architecture and its layers.
5) PPP protocol and its operations

6) The data rate of 10Base5 is 100 Mbps. How long does it take to create the smallest frame? Show your calculations.

7) Imagine the length of a 10Base5 cable is 1000 meters. If the speed of propagation in a thick coaxial cable is 100,000 meters/second:
   a. How long does it take for a bit to travel from the beginning to the end of the network?

   b. Find the maximum time it takes to sense a collision (worst case).