Data communication & Networking

For quick revise!.....

Unit :- 05

- Data Communication.
- Communication Modes.
- Data Transmission Media.
- Data Transmission Impairments.
- Computer Network (Types, Models, Topologies, Pros & Cons, Devices)
- Multiplexing.
- Data Security (Encryption, Decryption)
- Converting Digital signals to Analog signals.
- Modulation.
- Digital Communication Methods (PSTN, ISDN, ADSL, CDMA, GPRS,GSM)
- Communication Protocols (IP, HTTP, HTTPS, TCP, UDP, SMTP, POP, IMAP, FTP)
- Network Servers (DHCP, DNS, Proxy, Web server, Mail server)
- Network Commands (ping, ipconfig, hostname, etc)
- MAC & IP Addresses.
- Network Reference Models (OSI, TCP/IP)

1.) Identify net id and host id for following IP addresses.

i. 2.4.8.10
ii. 129.1.5.9
iii. 193.1.4.5
iv. 5.4.6.87
v. 175.25.36.98

2.) How many subnets & hosts can be added directly in following Subnets.

i. 255.255.255.224
ii. 255.255.255.248
iii. 255.255.255.240
iv. 255.255.255.128
v. 255.255.255.192

3.) Complete the following table.

IP Address	Class	Net id	Subnet Mask
169.18.0.0/16			
190.10.100.10/19			
12.15.10.0/10			
192.168.10.0/26			
15.16.7.0/12			
172.16.23.2/14			

4.) Identify the private IP addresses.

A-192.169.10.128 C-172.31.121.5

B-172.15.90.174 D-10.120.15.87

5.) Consider the IP address 192.168.15.100/24 and find;
   i. Network Address of given IP address.
   ii. Broadcast Address of given IP address.
   iii. Number of hosts in network.

6.) Consider the IP address 196.129.138.133/28 and find;
   i. Network Address of given IP address.
   ii. Broadcast Address of given IP address.
   iii. First host Address of the given network.
   iv. Last host Address of the given network.
   v. Number of hosts in network.
   vi. Number of subnets in network.

7.) Consider the IP address 192.168.100.154/27 and find;
   i. Network Address of given IP address.
   ii. Broadcast Address of given IP address.
   iii. First host Address of the given network.
   iv. Last host Address of the given network.
   v. Number of hosts in network.
   vi. Number of subnets in network.

8.) 192.168.1.96 is the IP address and 255.255.255.192 is the subnet mask of a computer local area network.
   i. How many subnets can be form?
   ii. How many hosts can be form?
   iii. What is the network address of given IP address?
   iv. What is the broadcast address of given IP address?
   v. What is the IP address range usable to the host in the given IP address of the subnet?

9.) 198.204.132.28/27 is the IP address of a computer local area network.
   i. How many subnets can be form?
   ii. How many hosts can be form?
   iii. What is the network address of given IP address?
   iv. What is the broadcast address of given IP address?
   v. What is the IP address range usable to the host in the given IP address of the subnet?

10.)A class C network 200.138.1.0 is sub-netted with subnet mask of 255.255.255.252
   i. Estimate the number of networks available.
   ii. Estimate the number of hosts that can be assigned for each network.
   iii. Write down the usable address range for first three networks.
   iv. Identify the broadcast address of first three networks.

11.)Give the layer of OSI model for all the following protocols and devices.

i. SMTP
ii. UDP
iii. ICMP
iv. Hub
v. NetBIOS
vi. Router
vii. IP
viii. Switch
ix. TCP
x. PPP

12.) Compare the Layers in OSI reference model.