



St. Francis Institute of Technology

(An Autonomous Institution)

AICTE Approved | Affiliated to University of Mumbai

A+ Grade by NAAC: CMPN, EXTC, INFT NBA Accredited: ISO 9001:2015 Certified

Department of Information Technology

Home Assignment 1

| | |
|--|---------------------------------|
| Subject: Computer Network & Network Design (CNND) | Class: SE INFT A |
| Name: Annie Dande | Roll No.: 15 |
| Batch: A1 | Academic Year: 2024-2025 |

| | |
|--------------------------------|---|
| Allotted Question No. 1 | What is the '/n' representation of mask 255.255.255.248? |
| Answer: | The '/n' representation, also known as CIDR (Classless Inter-Domain Routing) notation, of the subnet mask 255.255.255.248 = 11111111.11111111.11111111.11110000 is ' /29 '. This means that the first 29 bits of the IP address are used for the network portion, and the remaining bits are used for the host portion. |
| Allotted Question No. 2 | Find the range of CIDR IP addresses and no. of valid hosts for IP address 189.131.100.65/26 |
| Answer: | For the IP address 189.131.100.65 with a /26 prefix, the subnet mask is 255.255.255.192. This means that the first 26 bits of the IP address are used for the network portion, leaving 6 bits for the host portion. The network address for this IP range is 189.131.100.64, and the broadcast address is 189.131.100.127. Therefore, the range of IP addresses is from 189.131.100.64 to 189.131.100.127 , with a total of 62 valid host addresses available. This allows for the use of IP addresses within this range for assigning to devices on the network. |
| Allotted Question No. 3 | Find out your computer's Public and Private IP addresses? Also identify what class they belong to. |
| Answer: | Public IP address is of Class B : 128.0.0.0 to 191.255.255.255 |



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My IP Address is:

IPv4: ? **182.70.63.104**

IPv6: ? **Not detected**

My IP Information:

ISP: Bharti Airtel Ltd.
City: Pune
Region: Maharashtra
Country: India

Your location may be exposed!

HIDE MY IP ADDRESS NOW

[Show Complete IP Details](#)

Location not accurate?
[Update My IP Location](#)

Private IP address is of **Class C**: 192.0.0.0 to 223.255.255.255

```
C:\Users\Annie>ipconfig
```

Windows IP Configuration

Ethernet adapter Ethernet 3:

```
Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . . : fe80::3956:da95:8181:646f%6  
IPv4 Address. . . . . : 192.168.56.1  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . :
```

**Allotted
Question No. 4**

The size of option field of an IP datagram is 8 bytes. What is the value of HLEN? What is the value in binary?

Answer:

The size of the option field in an IP datagram is 8 bytes, making the total header size **28 bytes** (20 bytes for the standard header + 8 bytes for options). The Header Length (HLEN) field, which indicates the length of the header in 32-bit words, is calculated as 7 (since $28/4 = 7$). In binary, this value is represented as **'0111'**.