**Networks – Pramoda Medis**

**Exercise 02**

**IP ADDRESS EXERCISES**

1. The IP addresses of devices and their subnet masks are shown below. Find out which part of the address is network and which part is host.

a) 192.168.6.25, 255.255.0.0

b) 170.10.0.15, 255.255.255.0

c) 10.10.10.1, 255.255.255.0

***Answers***

|  |  |  |
| --- | --- | --- |
|  | **Network** | **Host** |
| a | 192.168 | 6.25 |
| a | 255.255 | 0 |
| b | 170.10.0 | 15 |
| b | 255.255.255 | 0 |
| c | 10.10.10 | 1 |
| c | 255.255.255 | 0 |

2. Which of the computers in the network below can operate with each other?

A diagram of a computer network

Description automatically generated

***Answers***

PC1🡪172.16 - Nothing

PC2🡪175 - PC3

PC3🡪175 - PC2

PC4🡪172.18 - PC7

PC5🡪192.168.5 - Nothing

PC6🡪192.168 - PC8

PC7🡪172.18 - PC4

PC8🡪192.168.6 - PC6

A computer and a cloud computing network

Description automatically generated with medium confidence3. The computer, "laptop" and mobile device in the picture are connected to the Internet via the router in the picture.

The router's IP address is 172.18.226.1 and the subnet mask is 255.255.255.0.

a) What should the IP addresses and masks of terminal devices be like in order

for Internet access to be possible?

b) What kind of IP address should be defined as the default gateway for terminal

device

***Answers***

1. PC - IP address is 172.18.226.2 and the mask is 255.255.255.0

Mobile - IP address is 172.18.226.3 and the mask is 255.255.255.0

Laptop - IP address is 172.18.226.4 and the mask is 255.255.255.0

1. The default gateway for terminal should be 172.18.226.1 (Same as the router IP address)

4. What is the first and last address available for devices on the networks below. Why?

a) 192.0.0.0 ; 255.255.255.0

b) 172.0.0.0 ; 255.255.0.0

c) 112.0.0.0 ; 255.0.0.0

d) 192.168.0.0 ; 255.255.0.0

***Answers***

|  |  |  |
| --- | --- | --- |
|  | **Network address** | **Broadcast address** |
| a | 192.0.0.0 | 192.0.0.254 |
| b | 172.0.0.0 | 172.0.0.254 |
| c | 112.0.0.0 | 112.0.0.254 |
| d | 192.168.0.0 | 192.168.254 |

The reason is the network is identifying for network itself, the broadcast is for sending data to all devices so everything in between can be used. So we have to give the first address as the network address and the last address as the broadcast address and the range in between can use for IP addresses.

5. Find out from your own computer:

a) Your IP address

b) Gateway IP address

c) DNS server IP address

d) DHCP server IP address

e) Does your computer use a public or private IP address

***Answers***

A screenshot of a computer program

Description automatically generated

a) Your IP address - 192.168.3.247

b) Gateway IP address - 192.168.3.202

c) DNS server IP address - 255.255.255.0

d) DHCP server IP address - 192.168.3.202

e) Does your computer use a public or private IP address – It’s a private address because it is as 192.168.3.247