Problems Based on IP address in Networking [UCSE21047]

Problem - 01:

For the following IP address, Identify the Class, Network IP address, Direct broadcast address and Limited broadcast address of each IP address

1) 1.2.3.4
   → Class A
   → Network IP address = 1.0.0.0
   → Direct Broadcast Address = 1.255.255.255
   → Limited Broadcast Address = 255.255.255.255

2) 10.15.20.60
   → Class A
   → 10.0.0.0
   → 10.255.255.255
   → 255.255.255.255

3) 130.1.2.3
   → Class B
   → 130.1.0.0
   → 130.1.255.255
   → 255.255.255

4) 150.0.150.150
   → Class B
   → 150.0.0.0
   → 150.0.255.255
   → 255.255.255.255

5) 200.1.10.100
   → Class C
   → 200.1.10.0
   → 200.1.10.255
   → 255.255.255.255

6) 220.15.1.10
→ Class C
→ 220.15.1.0
→ 220.15.1.255
→ 255.255.255.255

7) 250.0.1.2
→ Class E
→ N/A
→ N/A
→ N/A

8) 300.1.2.3
→ This is not a valid IP address

Problem -2

A device has two or more IP addresses, the device is called
   a) Workstation
   b) Router
   (c) Gateway
   (d) All of these

Ans→ D) All of these

Problem 3

A host with IP address 200.100.1.1 wants to send a packet to all the hosts in the same network.
What will be-
   1. Source IP address
   2. Destination IP address

Ans:- Source IP address = 200.100.1.1
      Destination IP address = 255.255.255.255

Problem 04

A host with IP address 10.100.100.100 wants to use loop back testing

What will be -

1. Source IP address
2. Destination IP address.

A- Source IP address = 10.100.100.100

Destination IP address = 127.0.0.1

Problem 05

How many bits are allocated for Network ID and Host ID in
23.192.157.234 address?

A- Number of bits reserved for Network ID = 8
Number of bits reserved for Host ID = 24

Problem 6

Which devices can use logical addressing System?

1. Hub
2. Switch
3. Bridge
4. Router

A-) Option (4) is correct because
→ Router can use physical addressing system as well as logical address
System
→ This is because it has network layer as the last layer.

Problem 7

What is the network ID of the IP address 230.100.123.70?
A- It belongs to Class D
So, there is no network ID for the given IP address

Problem 8

Match the following

200.10.192.100 — Class A

7.10.230.1 — Limited Broadcast

128.1.1.254 — Direct Broadcast

255.255.255.255 — Class C

100.255.255.255 — Class B

Problem 9

Suppose that instead of using 16 bits of network part of class B address, 20 bits have been used. How many class B networks would have been possible?

A- 20 bits are there.
   2 bits are reserved as 10
   So there are total 18 bits, So no. of network possible $= 2^{18}$

Problem 10

What is the default mask for 192.0.46.10?

A- Belongs to Class C
   For class C, default mask - 255.255.255.0