

Name: Syed Shafiq  
ID # 12801

①

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Q. In a block of address, we know the IP address of one host is ~~101~~ 101.10.11 block?

Ans: IP = ?

IP = 101.10.11.12801

- ① IP = 101.10.11.12801
- ② = 101.10.11.12802
- ③ = 101.10.11.12803
- ④ = 101.10.11.12804
- ⑤ = 101.10.11.12805
- ⑥ = 101.10.11.12806
- ⑦ = 101.10.11.12807
- ⑧ = 101.10.11.12808
- ⑨ = 101.10.11.12809
- ⑩ = 101.10.11.12810
- ⑪ = 101.10.11.12811
- ⑫ = 101.10.11.12812
- ⑬ = 101.10.11.12813
- ⑭ = 101.10.11.12814
- ⑮ = 101.10.11.12815.

Sum of 4<sup>th</sup> and 5<sup>th</sup>

$$12804 + 12805$$

$$\Rightarrow 25609$$

Signature

0, 1, 2, 3, 4, 5, 6

Acknowledgment received for two  
bits.

Receiver:

0 1, 2 3 4 5 6

Receiver has received all data  
hence the window remain 4  
bit size.

Ans c:

Sender:-

0 1 2 3 4 5 | 6 7

Receiver:-

Ack received for one bit

0 1 2 3 4 5 | 6 7 0 1

Q3. Two neighboring nodes (A & B) has been positive

ans:

(a) Before A sends any frames  
Sender: 0 1 2 3 | 4 5 6

window of PDU that may be transmitted = 4 bit window.

Receiver:

0 1 2 3 | 4 5 6

Ans b: After A sends 0, 1, 2, 3, 4

and receives acknowledgement from

B for 0, 1, 2.

Sender:

A has shrunk its window

as it has transmitted 5 PDUs but

has received acknowledgement for 3 PDUs,

hence it is keeping copy of one

PDU.

Q4. An ISP is granted a block of address with 160.1.0.0/24 after these allocations:

Ans

(a) First group of 16 character by 64 addresses.  
( $2^6 = 64$ )

$$32 - 6 = 26$$

usable address

Total number of addresses 64.

Mask id = 190.100.28.0

Network id = 190.100.185.43

First id = 190.100.126.44

Last id = 190.100.127.45/25

$$\text{Total } 16 \times 64 = 1024$$

(b) 5 ( $2^5 = 32$ )

$$32 - 5 = 27$$

Total number of addresses.

Mask id = 160.21.7.0/16

Network id = 160.21.7.32/27.

\* Performing & operations:

101.10.11.27

255.0.0.0

101.0.0.0

IP address = 101.0.0.0

\* Limited broadcast address:-

As limited broadcast does not change from router to another and sent message to limited people of an organization so it is always either all ones or all zeros.

Limited broadcast address: 255.255.255.255

Or

Limited broadcast address = 0.0.0.0

Date: / / 20

Q. Take your roll no.

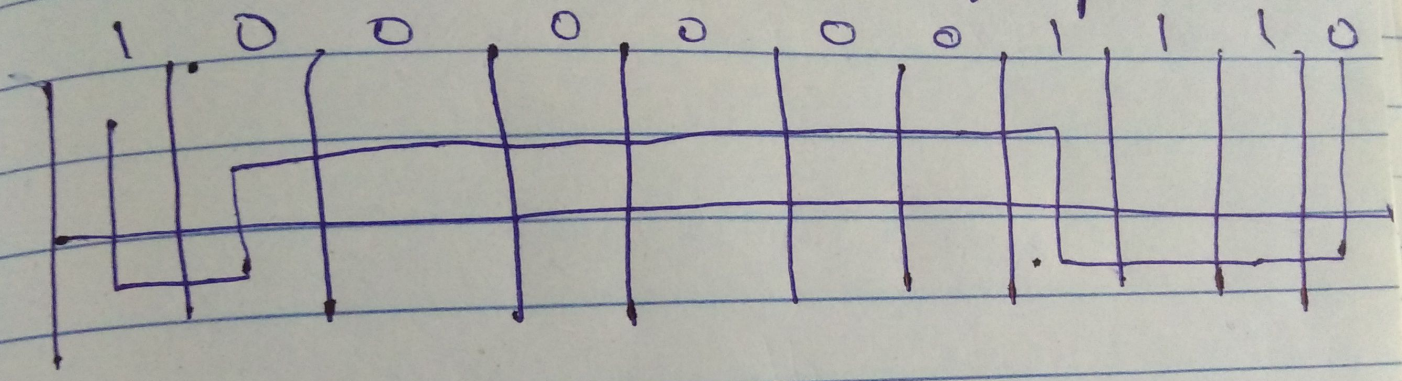
Ans. 12801 (change to binary)

2	12801
2	6400 - ①
2	3200 - ①
2	1600
2	800
2	400
2	200
2	100
2	50
2	25
2	12.5 - ①
2	6.25 - ①
2	3.125 - ①
2	1.5625
	0.781

(12801) = 100000000000111.

Signature

NRZ-6  $\oplus$  scheme group



~~(Q2)~~ Q4 (c)

[ 64 customer  
16 address ]

Total numbers of address

Mask : 100.21.7.0/32

network : 160.21.7.5/24

Last network

160.21.7.31/15

Total:  $16 \times 64 = 1088$

available