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ID : 12511

Subject : Computer Communication and Networks

Semester : 10th

Question No 1 :-

In a block of addresses, we know the IP address of one host is 101.10.11.x / 1024 what are the first address (network address) and the last address (limited broadcast address) in this block?

Answer :-

IP = 101.10.11.12511

1) = 101.10.11.12511
2) = 101.10.11.12512
3) = 101.10.11.12513
4) = 101.10.11.12514
5) = 101.10.11.12515
6) = 101.10.11.12516
7) = 101.10.11.12517
8) = 101.10.11.12518
9) = 101.10.11.12519
10) = 101.10.11.12520
11) = 101.10.11.12521
12) = 101.10.11.12522
13) = 101.10.11.12523
14) = 101.10.11.12524
15) = 101.10.11.12525

Sum of 4th and 8th
12514 + 12515
25029

Performing and operation

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 send message to limited people of an organization so it is always either "All one's or all zero's)

limited broadcast address = 255.255.255.255

OR

" " " = 0.0.0.0

01100101
11111111
01100101

10 = 00001010
0 = 00000000
00000000 = 0

Question No 2:-

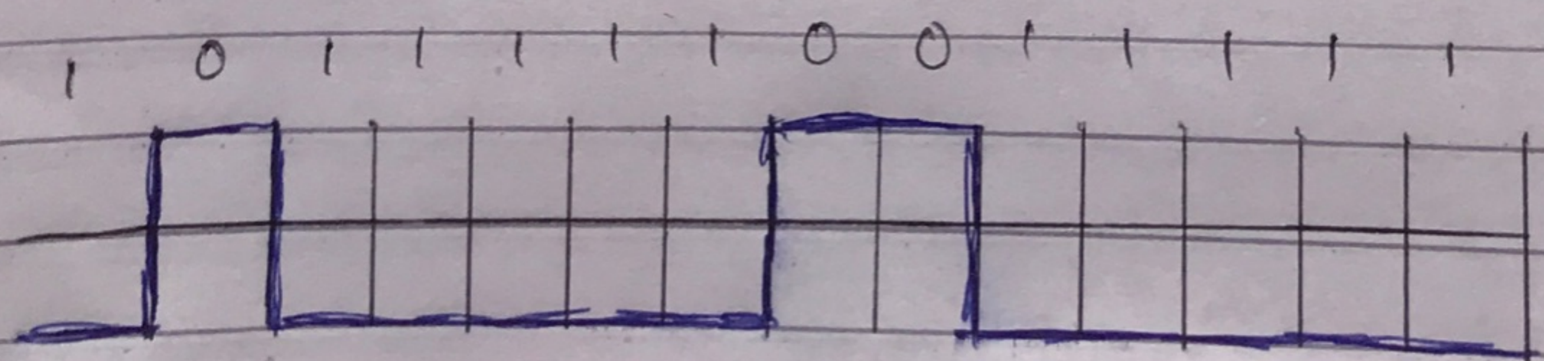
Take your Roll no as decimal notation, now convert it to Binary notation Draw the graph of the NR2-L scheme using the binary notation of yours roll no as data stream, assuming that the last signal level has been positive.

Answer:- 12511 (change into Binary form)

2	12511
2	6255 — 1
2	3127 — 1
2	1563 — 1
2	781 — 1
2	380 — 1
2	190 — 0
2	95 — 0
2	47 — 1
2	23 — 1
2	11 — 1
2	5 — 1
2	2 — 0
	1 — 0

$(12511)_{10} = (10\,111\,110\,011\,111)_2$

NR2-L Scheme Graph



Question No 3 :-

Two neighboring nodes (A and B) use a sliding-window protocal with a 3-bit sequence number.....

Answer :-

(a) Sender :- 0 | 1 [2 5] 11

Receiver has recieved all date hence the window remain 4 bit size

Before A sender any frames

Sender [0 | 2 5] 11

window of PDU that may be transmitted = 4 bit

Recieves :- [0 1 7 5 11]

(b)

After A sends 0, 125 11 and recieved acknowledgment from B for 0, 1, 2

0 1 | 2 [5] 11

Acknowledgment recieved for two bits

(C) Senders:-

0 1 2 3 4 [1 2 5 11]

Recivers:-

Ack received for one bit

0 1 2 3 4 | 1 2 5 11

(Page 5) (ID 12511)

Question No 4 :-

An ISP is granted a block of addresses with 160.(x).(ID₃₊₄)-0/16
The ISP needs.....

Answer :-

(a) First Group 16 customer 64 address

(2^6 = 64)
32-6 = 26
usable address
total number of address : 64

Mask id = 190.100.28.0
Network id = 190.100.125.11
First = 190.100.126.12
last = 190.100.127.13 /25

total 16x64 = 1024

(b) 5 (2^5 = 32)
32-5 = 27
usable address
total number of address = 32

Mask id = 160.21.7.0 /16
First network = 160.21.7.2 /27
Last 160.21.7.31 /26
Total : 16x64
= 1088 Available

(c) 64 customer
16 addresses

Total number of addres

Mask 160.21.7.0 /32

Network 160.21.7.5 / 24

Cast Network 160.21.7.31 /15

total 16 x 64

= 1088 available.

END of Paper