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Section#	B
Departement	BSCSE)
Exam	Final
paper	(CCNA) computer communication & NetworKing
Semester	4th

Instructer:-

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Question#1

in a black of address, we know the IP address of one host is 201.10.11.X/ID4+5.

what are the First address (network address) and the Last address (limited broadcast) in this block?

ANSWER

↳ given that 101.10.11.X/ID4+5

→ My ID# is 14882

→ So Now X = 23

This is the some of my ID.

→ $ID_{8+2} = 10$

This is Sum of last 2 degits of my Id.

→ **The IP Address Now is:**

101.10.11.23/10

(B)

→ **Now convert it into Binary:-**

101.10.11.23/10

→ 101

2	101
2	50 — 1
2	25 — 0
2	12 — 1
2	6 — 0
2	3 — 0
2	1 — 1
	1

→ **Now For direct written Binary conversion.**

1100101 · 1010 · 1011 · 10111 · 1010

→ **Now For address Mask:-**

The address mask For above is 15.

(3)

→ Now For First Ip Address:-

32 − 15 = 17

0000 0000 0000 00000

→ Network Ip:- 101.10.11.17

→ First Ip:-

101.10.11.17
101.10.11.18
101.10.11.19
101.10.11.20
101.10.11.21
101.10.11.22
101.10.11.23
101.10.11.24

→ Last Ip:

101.10.11.196

→ Broadcast Ip:-

101.10.11.197

← r →

Question#2

Take your Roll number No as decimal notation, now convert it to binary notation. Draw graph of NRZ-L scheme using Binary notation?

ANSWER

→ My ID# is 14882

↳ Now the ID convert into Binary notation.

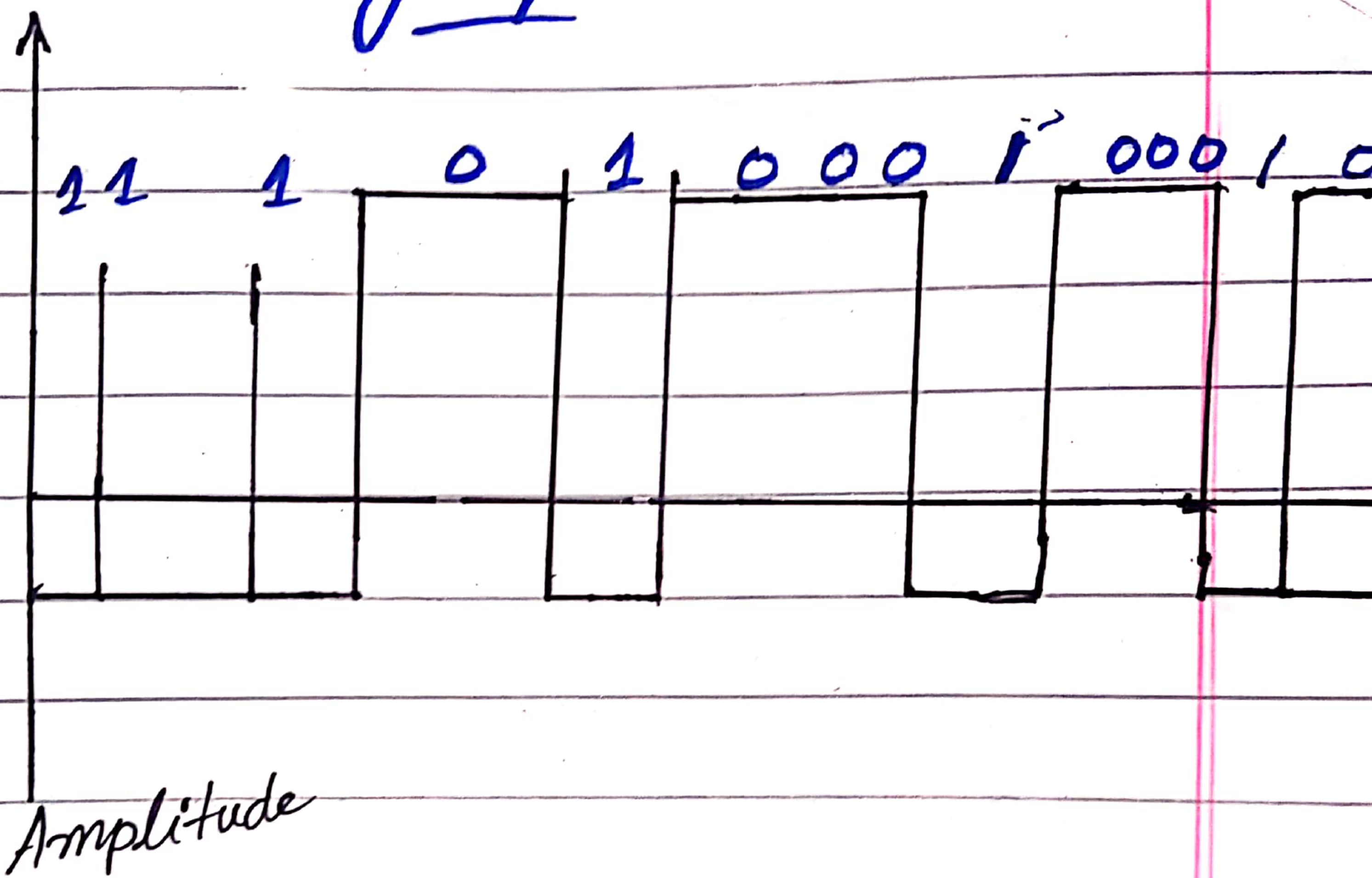
→ Decimal to Binary :-

2	14882
2	7441 — 0
2	3720 — 1
	1860 — 0
2	930 — 0
2	465 — 0
2	232 — 1
2	116 — 0
2	58 — 0
2	29 — 0
2	14 — 1
2	7 — 1
2	3 — 1
	2 — 1

111010001
00010

Scanned with CamScanner

→ Now For NRZ Scheme graph:-



(7) **Question#3**

Two neighboring nodes (A and B) use a sliding-window protocal with 3-bit sequance number. As the ARQ mechnism, go-back-N is used with a new size of IDlast ......?

ANSWER

↳ Go-Back-N ARQ is a specified instance of the automatic repeat Request protocal, in which the sending process continues to send a number of frames specified by a window.

a) Before A sends any frames?

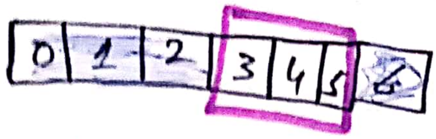
↳ Before A sends any frames.

Sender:-

0	1	2	3	4	5	6

Window that may be transmitted 4 Bits window.

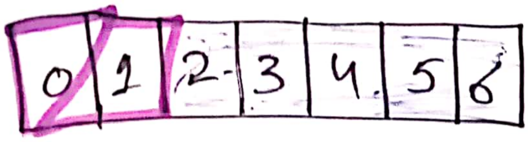
→ **Reciver:-**



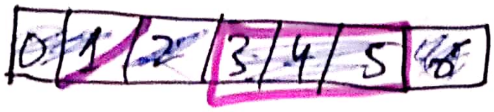
↳ The sender will time out if it to recive ano ACK. the Rej improve effieciency by informing the sender of a bad frame as early as possible.

B) AFter send A frames 0 1 2 3 - 7

→ **Sender:-**



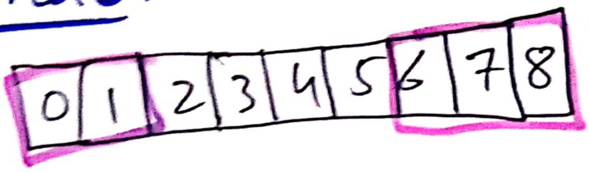
↳ A has Shrunk its window as its transmitted three pass that has recived ask for a pass.



Reciver has Recived all Data in the window remain an a bit size.

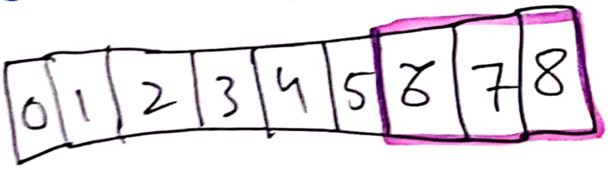
c) AFter A Sends Frames 0,1, 2,3,4 and B — ?

→ **Sender:-**



↳ increasing the number of frames would decrease frame size.

→ **Reeiver**



↳ Frame can be sent at a time, and transmission must stop until is recived.

→ **Note** if IDLast > 5 IDlast/2.

My ID# 24882

ID Last = 2

So window size is

2

⟵ r ⟶

Question#4

An ISP granted a block of addresses starting with $160.(x).(ID_{3+4}).0/16$. the ISP need to distribute these addresses. ...?

ANSWER

→ My ID# 14882

given that

$160.(x).(ID_{3+4}).0/16$

Now $ID_{3+4} = 7$

$x = 23$

→ a) The First group has 16 Costumers; Eeach needs 64 addresses.

→ **Solution:-**

↳ For this group, Eeach costumer needs 64 addresses. this mean that 6 FIBS 6 (log_2^{64}) Bits are need to define Eeach Host. the prefix length is then 32-6 = 26.

1st Costumer:-

160.23.7.0/26
160.23.7.63/26

2nd Costumer:-

160.23.8.0/26
160.23.8.63/26
....

16th Costumer:-

160.23.88.0/26
160.23.88.63/26

Total = 16 × 64 = 1024

b) The Second group has 64 costumers; Eeach needs 32 address?

Solution:-

↳ For each group, Eeach costumer needs 32 addresses, this meam that is 7 ($\log_2^{64}$) Bits are needed to define Eeach host. the prefix length is then

$$32 - 7 = 25.$$

1st costumer:-

160.23.8.0/16

160.23.8.25/16

2nd Costumer:-

160.23.4.0/16

160.23.4.25/16

....

64th costumer:-

160.23.1.0/16

160.23.1.25/16

Total = 64x32 = 2048

→ c) The third group has 64 costumers; Eeach needs 16 addresses?

Solution:-

↳ For this group, Eeach Costumers needs 16 addresses. This mean that

5 ($\log_2 64$) Bits are needed to each host. the prefix length is then

$$32-5 = 27$$

1st costumer:-

160.23.8.0/16
160.23.8.27/16

2nd costumer:-

160.23.4.0/16
160.23.4.25/16
....

64th costumer:-

160.23.2.0/16
160.23.2.25/16

Total = 64×16 = 1024.

The number of Available Addresses:

4096