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Subject : Computer Communication & Networking.

Semester 4th

Section A.

Name: Abdul Saleem ID: 14480 CCNA sect (A)

1. In a block of addresses, we know the IP address of one host is $101.10.11.x/10_{4th}$. What are the first address and last address in this block.

Solution: ID = 14480

$$x = 17$$

$$4^{th} = 8$$

$$5^{th} = 0$$

$$4^{th} + 5^{th} = 8 + 0 = 8$$

In a block of addresses, the IP address is

$$101.10.11.17/8$$

IP into binary.

$$01100101, 00001010, 00001011, 00010001$$

If we set 32-8 rightmost bits to 0, we get

$$32 - 8 = 24$$

$$01100101, 00000000, 00000000, 00000000$$

Convert binary into decimal for IP.

$$101.0.0.0$$

First address = 101.0.0.0.

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Now from the previous binary notation we will set 32-8 to the rightmost 1's.

01100101, 11111111, 11111111, 11111111,

101.255.255.255.

Limited broadcast address: 101.255.255.255.

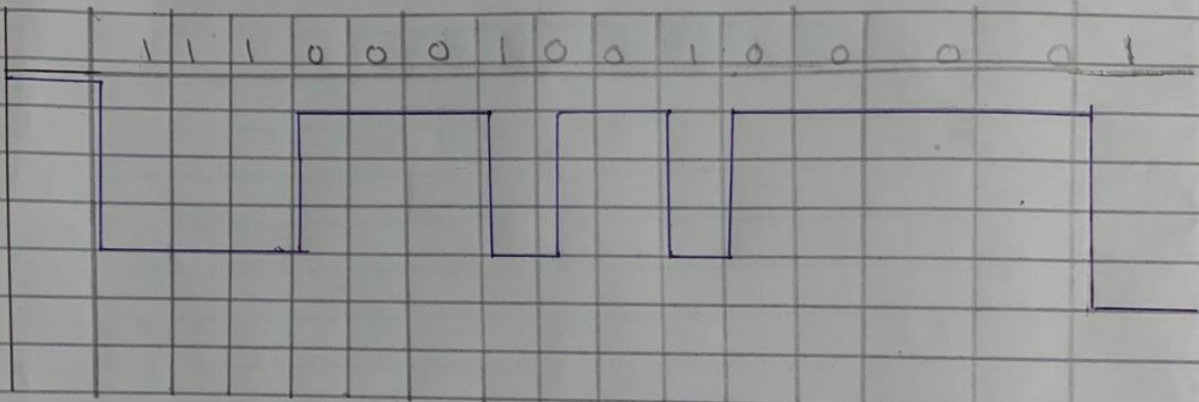
ID: 14480

Q.2. ~~Take~~ Take your Roll no. as decimal notation, now convert ~~the~~ into binary notation. Draw the graph of the NRZ-L scheme.

Soln:

Roll no: 14480.

In binary notation: 11100010010000



ID: 14480

Q.3.

Ans: ID = 14480

Last digit = 0

• Before A sends any frames.

Sender:

0 1 2 3 4 5 6 7

Window of _{PDUs} can't be transmitted because last digit is 0.

Receiver:

0 1 2 3 4 5 6 7

B, After being A sent frames 0, 1, 2, 3, 4 and received ack knowledge from B of 0, 1 and 2.

Sender:

A has shrink ~~the~~ window as it's transmitted 5th PDU but get back 3 ~~PDUs~~ PDUs hence keeping 2 PDUs.

0 1 2/3 4 5 6 7Receiver: 0 1 2/3 4 5 6 7

Receiver received all its data so window remains 2 bit size.

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C. After A sends frames 5, 6 and
B ack 5 Ack received by
d.

Sender:

0 1 2 3 4 5/6 7 0/1

Receiver:

0 1 2 3 4 5/6 7 0/1

Ack received

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Q.4.

Ans: Group A:

For Group A, each customer needs (64) addresses. So $6(\log_2 64)$ bits are needed to each host.

The prefix length is $32 - 6 = 26$ and the addresses are:

$$1st = 160.17.12.6/26$$

$$2nd = 160.17.1.26$$

$$3rd = 160.18.12.6/26$$

$$Total = 16 \times 64 = 1024.$$

Group B:

For this group each customer needs 32 addresses. So this $(\log_2 32)$ bits are needed for each host.

The prefix length is then $32 - 6 = 26$ the addresses are:

$$1st = 160.17.12.6/27$$

$$2nd = 160.17.12.1/27$$

$$3rd = 160.18.12.6/27$$

$$Total = 16 \times 64 = 1024.$$

Group C:

For this group each customer need 16 addresses this means that $6(\log_2 16)$ bits are need.

$$32 - 6 = 26.$$

The addresses are:

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Per #7.

~~1st = 160. 17. 12~~

1st = 160. 17. 12. 6/28

2nd = 160. 17. 12. 1/28.

3rd = 160. 18. 12. 6/28.

Total = 16 x 64 = 1024.