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P.g : 1

NAME : Adnon nebi

ID NO : 141517

SUBJECT : CCN

DEPARTMENT : B.S^{SE} SE^{SE}

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Q1: In a block of addresses we know the IP address of one host is 101.10.11.X/ID₄+5. What are the first address and the last address in this block?

ANS:

- ID : 14517
- X : 17
- 4th : 1
- 5th : 7
- 4th + 5th : 8

In this block of addresses we know the IP addresses is : 101.10.11.101.10.11.17
 On host first address : 101.10.0.2
 Network address : 101.10.0.1
 last address : 101.10.11.516
 limited address : 101.10.11.517



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Q2 : Take your roll no as a decimal notation. now convert it into binary notation. draw the graph of the NRZ-L scheme using the binary notation of your roll no as a data stream. assuming that the last signal level has been positive. ?

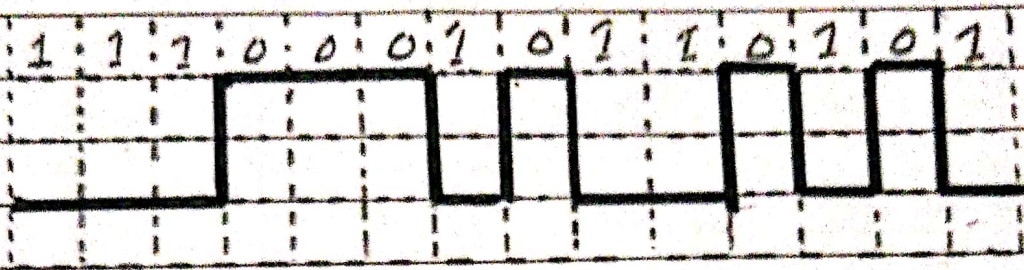
ANS :

2	14517	1
2	7258	0
2	3629	1
2	1814	0
2	907	1
2	453	1
2	226	0
2	113	1
2	56	0
2	28	0
2	14	0
2	7	1
2	3	1
	1	

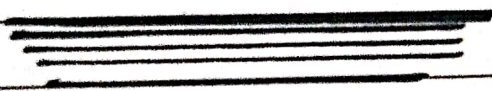


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Binary notation of 14517 :
11100010110101



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Q3:

(a):

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
---	---	---	---	---	---	---

(b):

SENDER:

A has shrunk its window as it has transmitted three PDUs but has received only two PDUs hence it is keeping copy of the PDU

0	1	2	3	4	5	6
---	---	---	---	---	---	---

RECEIVER:

0	1	2	3	4	5	6
---	---	---	---	---	---	---

Receiver has received all data hence the window remains in 4 bits size. ∞ INFINITY



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(C)

SENDER

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

RECEIVER:

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



Q4:

An ISP is granted a block of address starting with $160 \cdot (x) \cdot (10_{3+4}) \cdot 0/16$. The ISP needs to distribute these addresses to three groups of customers as follow.

(a) The first group has 16 customer ; each need 64 address.

(b) The second group has 64 customers ; each need 32 addresses.

(c) The third group has 64 customer ; each need 16 address.

Design and find out how many address are still available after those allocations.

ANS:

$$160 \cdot x \cdot 10_{3+4} \cdot 0/16$$

$$= 160 \cdot 17 \cdot 7 \cdot 0/16$$

(a):

First group have 16

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Customer and 64 addresses

$$1 \quad (2^6 = 64)$$

$$32 - 6 = 126$$

Usable address.

Total number of address: 64

Mask: 190.100.128.26

Network id: 190.100.0.0

First = 190.100.0.0 / 25

= 190.100.0.0

Last = 190.100.0.127 / 25

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

Available address.

(b):

$$5 \quad (2^5 = 32)$$

$$32 - 5 = 27$$

Usable address

Total no. of address = 32

Mask: 160.21.7.0 / 16

Network: 160.21.7.0 / 27

Last: 160.21.7.31 / 26



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

Available.

(C) :

64 customers and 16 addresses.

$$4(2^4 = 16) \\ 32 - 4 = 28$$

Usable address

Total number of address = 16

$$\text{Mask} = 160.21.7.0/16$$

$$\text{Network} = 160.21.7.16/28$$

1st

$$\text{Last} = 160.21.7.15/27$$

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

Available address.

