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ID No:- 14448

Subject:- Data Communication & Networks

Program:- BSCSE

Semster:- 4th (A)

Page #1

ID No = 16648

Question #1:-

$$ID = 16648$$

$$x = 21$$

$$4^{\text{th}} = 4$$

$$5^{\text{th}} = 8$$

$$4^{\text{th}} + 5^{\text{th}} = 12 (4+8)$$

In a block of addresses, we know the IP address is 101.10.11.21/12

$$101.10.11.21$$

One host first address 101.10.0.2

Network address : 101.10.0.1

Last address : 101.10.11.447

Limited Address : 101.10.11.448

Q No = 2:-

Roll Number decimal to Binary:-

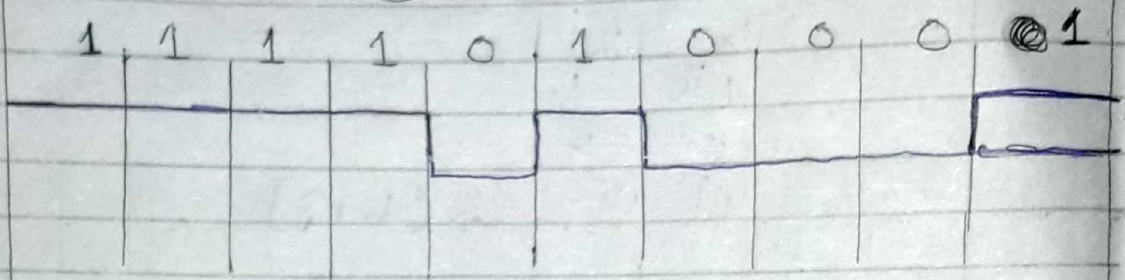
		Reminders	
2	16648	0	
2	7224	0	
2	3612	0	
2	1806	0	
2	903	0	1111010000
2	451	1	
2	225	0	
2	112	1	
2	56	1	
2	28	1	
2	14	1	
2	7	1	
2	3	1	
2	1	1	

P.T.O

Page #2:-

ID No = 14448

NRZ-L Graph



Question #4:-

(A)

First group 26 customers, 64 addresses

$$2(2^6 = 64)$$

$$32 - 6 = 26$$

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

Total : 16 x 64 = 1024 available Address.

(B):-

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

$$32 - 5 = 27$$

usable address

Total Number of address = 32

Mask : 160.21.8.0/16

P.T.O

First network : 160.21.8.32/27

Last : 160.21.8.31/26

Total : ~~16x64~~ = 64x32 = 2048

(C) - Group 64 customers : 16 address

$4(2^4) = 16$

$32 - 4 = 28$

usable address

Total number of address = 16

mask : 160.21.8.0/16

First Network = 160.21.8.16/28

Last : 160.21.8.15/27

Total = 64x16 = 1024

Available address.

Question #3.

(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

(B)

Window = 1000-11118

After A sends frame 0, 1, 2 and receives acknowledgement from B for 0 and 1 (suppose B received all three frames).

Sender

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 remains in 4 bit size.

(C)

After A sends frame 3, 4, and 5 and B acknowledges 4 and ACK is received by A

Sender

0 1 2 3 4 5 6 7 0 1

Receiver

Acknowledgment received for two bits

0 1 2 3 4 5 6 7 0 1