Course: Introduction to Computer Network (18CSCN01I)



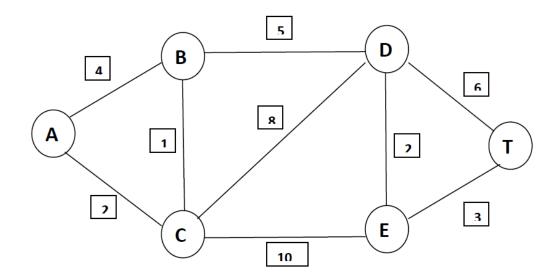
Assignment 5

Covered Topics:-

Dijkstra's Algorithm and Encoding Schemes

Problem 1

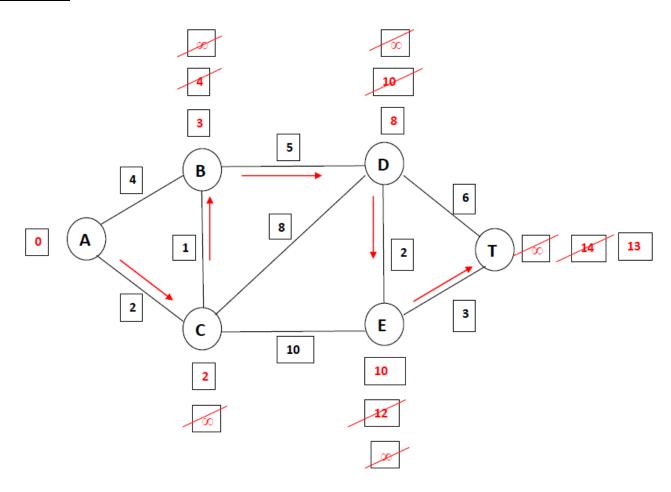
Create the routing table of the router 'A' in the following network and determine the cost if the destination is the router T. (Dijkstra's Algorithm)



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Solution: -



Problem 2

Create the routing table using the data in the previous question (Destination, Next hop, Cost).

Solution:-

Destination	Next Hop	Cost
В	C	3
C	C	2
D	C	8
E	C	10
T	C	13

Module Leader: Prof.Dr. Amal El Nahas

Module T.As: Eng. Amira Olayan, Eng. Mahitab El-Attar, Eng. Aliaa Walid, and Eng. Mona Ossama

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Problem 3

Find the interface each IP address should go through.

Prefix Match	Link Interface
10.50.20.0 /24	0
10.50.20.0 /22	1
10.50.0.0 /16	2
10.0.0.0 /8	3
Otherwise	4

- a) 10.50.20.10
- b) 10.50.20.16
- c) 10.0.0.50
- d) 24.0.0.1

Solution: -

Prefix Match	Link Interface
10.50.20.10	0 or 1
10.50.20.16	0 or 1
10.50.0.50	3
24.0.0.1	4

Problem 4

Draw for the follow bits their corresponding graph for the following coding schemes: (01001101)

- a) UniPolar.
- b) Polar (NRZ-L, NRZ-I, RZ).
- c) Bipolar AMI.

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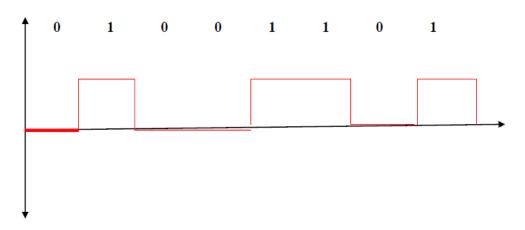
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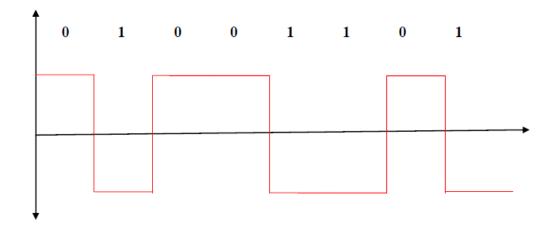
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Solution: -

a) UniPolar



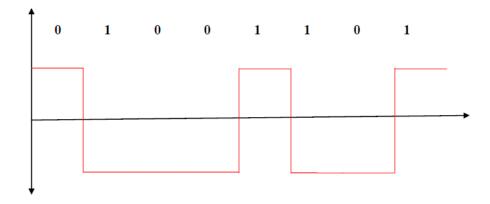
b) Polar (NRZ-L)



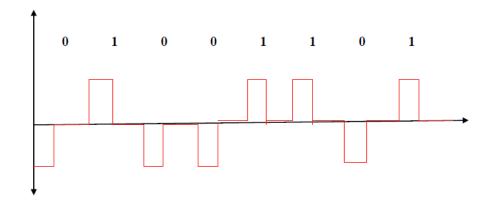


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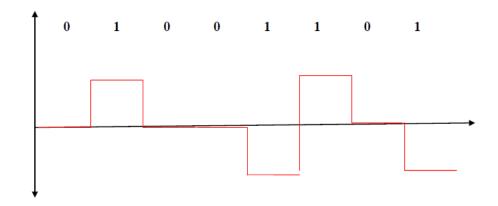
c) Polar (NRZ-I)



d) Polar (RZ)



e) Bipolar AMI.



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