HW #3b Solution

A)

a) D TO H S1 → S2 → S4

Create a table showing connection path for each connection requested. Then make a listing for the switches

Connection	Switch	In Port	In VCI	Out Port	Out VCI
D TO H	S1	0	0	1	0
	S2	3	0	1	0
	S4	3	0	0	
B TO G	S3	3	0	0	0
	S2	0	0	1	1
	S4	3	1	1	0
F TO A	S4	2	0	3	2
	S2	1	2	3	1
	S1	1	1	2	0
H TO C	S4	0	1	3	3
	S2	1	3	3	2
	S1	1	2	3	0
I TO E	S3	2	0	0	1
	S2	0	1	2	0
H TO J	S4	0	2	3	4
	S2	1	4	0	2
	S3	0	2	1	0

VCI numbers are for each port NOT for each switch.
So, each port has VCI #'s 0, 1, 2, ...

A cont)

Switch tables are

Switch 1

In Port	In VCI	Out Port	Out VCI
0	0	1	0
1	1	2	0
1	2	3	0

Switch 2

In port	In VCI	Out Port	Out VCI
3	0	1	0
0	0	1	1
1	2	3	1
1	3	3	2
0	1	2	0
1	4	0	2

Switch 3

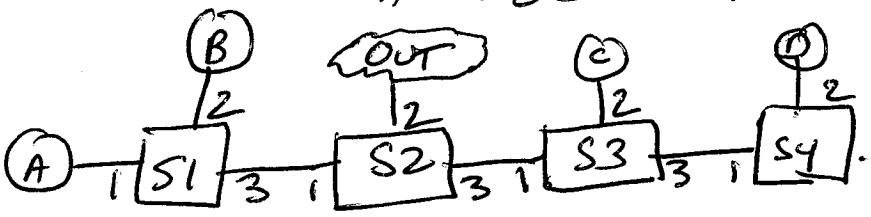
In Port	In VCI	Out Port	Out VCI
3	0	0	0
2	0	0	1
0	2	1	0

Switch 4

In Port	In VCI	Out Port	Out VCI
3	0	0	0
3	1	1	0
2	0	3	2
0	1	3	3
0	2	3	4

HW #3B Solution

B)



switch S1

HOST	PORT
A	1
B	2
Default	3

(handles all unknown HOSTS and card D)

switch S2

HOST	PORT
A	1
B	1
C	3
D	3
Default	2

switch S3

host	PORT
C	2
D	3
Default	1

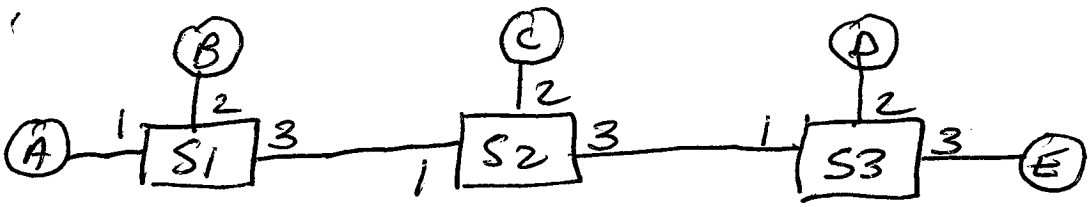
(handles unknown, A, B)

switch 4

Host	PORT
D	2
Default	1

(handles unknown, C, B, A)

c)



Virtual Circuit Switches

Given Table 3.6 which shows the virtual circuit connections, List all endpoint-to-endpoint connections.

looking at S2 and S3 tables, There are no Incoming Port numbers of 2 for SW2 (Traffic From C) or Ports 2 or 3 for SW3 (Traffic from D or E)

Therefore All traffic originates from A or B connected to SW1

SW1 Incoming Port	SW1 Incoming VCI	SW1 Outgoing Port	SW1 Outgoing VCI	SW2 Incoming Port	SW2 Incoming VCI	SW2 Outgoing Port	SW2 Outgoing VCI	SW3 Incoming Port	SW3 Incoming VCI	SW3 Outgoing Port	SW3 Outgoing VCI
1	2	3	1	1	1	3	3	1	3	2	1

↑ Traffic from A

SO A Transmits TO D

3

SO A Transmits TO B

1 1 2

↑ Traffic TO D

↑ Traffic from A

2 1 3 2 1 2 3 2 1 2 3 1

↑ Traffic TO E

↑ Traffic from B

SO B Transmits TO E