COE 444 - Internetwork Design and Management
Spring 2005 (Term 042)

Homework 2
- Solution -

Date: Sunday, February 27, 2005

Q1.

		Source LAN					
		S1	**S2**	**S3**	**S4**	**S5**	**S6**
Destination LAN	**S1**	-	B1	B1	B3	B5	B4
	S2	B1	-	B1	B3	B5	B6
	S3	B1	B1	-	B3	B5	B4
	S4	B1	B1	B3	-	B5	B4
	S5	B1	B1	B3	B5	-	B4
	S6	B1	B6	B4	B4	B5	-

B1 Table					
From S1		**From S2**		**From S3**	
Dest.	**Dest.**	**Dest.**	**Next**	**Dest.**	**Next**
S2	S2	S1	S1	S1	S1
S3	S3	S3	S3	S2	S2
S4	S3	S4	S3	S4	-
S5	S3	S5	S3	S5	-
S6	S2/S3	S6	-	S6	-

B3 Table			
From S3		**From S4**	
Dest.	**Next**	**Dest.**	**Next**
S1	-	S1	S3
S2	-	S2	S3
S4	S4	S3	S3
S5	S4	S5	-
S6	-	S6	-

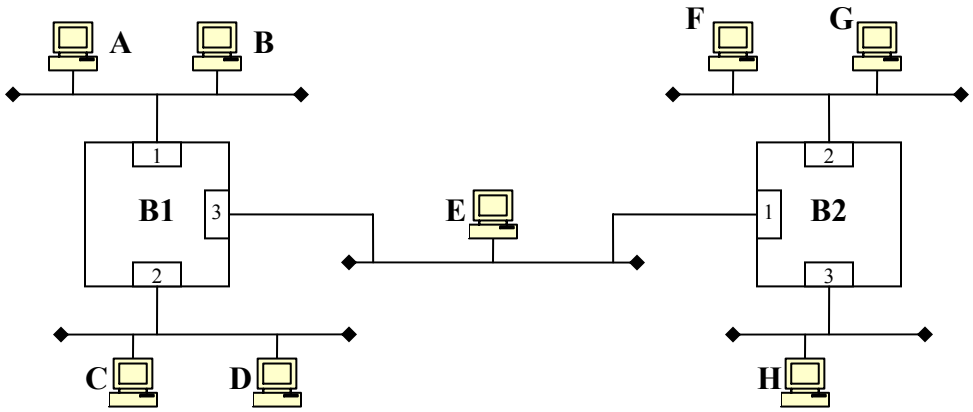
Q2.

Central routing directory

		Source LAN		
		S1	**S2**	**S3**
Dest. LAN	**S1**	-	B1	B3
	S2	B1	-	B3
	S3	B1	B3	-

B1 Table			
From S1		**From S2**	
Dest.	**Next**	**Dest.**	**Next**
S2	S2	S1	S1
S3	S2	S3	-

Q3. Given a LAN consisting of five 10 Mbps Ethernet segments interconnected by two transparent bridges as illustrated in the figure below.



B1 forwarding table has the following entries (the aging time is set initially to 300 seconds):

MAC Address	Port	Aging time
B	1	~~200~~ **300**
H	3	150
A	**1**	**300**
C	**2**	**300**
E	**3**	**300**
G	**3**	**300**

A frame is received without error by Bridge B1 with destination address (DA) and source address (SA) as stated in the following table. Fill the following table with the appropriate information.

Frame transmitted	Does B1 forward this frame? If yes, then on which port(s) does B1 forward this frame?	Does B1 add/update an entry to its table? If yes, then update the above table with appropriate changes?
DA = "A", SA = "B"	**Yes, to ports 2 & 3**	**Yes, update the entry for B**
DA = "B", SA = "A"	**No**	**Yes, add an entry for A**
DA = "H", SA = "C"	**Yes, to port 3**	**Yes, add an entry for C**
DA = "H", SA = "E"	**No**	**Yes, add an entry for E**
DA = "D", SA = "G"	**Yes, to ports 1 & 2**	**Yes, add an entry for G**