Worked Out Example 4.3A

AS1 has 6 routers A,B,C,D,E,F with the following link costs:

AB(6) BC(4) CD(2) DE(5) EF(1) FA(2) BF(3) CF(3) CE(1)

AS2 has 5 routers P,Q,R,S,T with the following link costs

PQ(5) QR(7) RS(1) ST(1) TP(1) RT(1) QT(3) PS(3)

B and C are border routers of AS1. R and S are border routers of AS2. The cost of link B-R is 9 and the cost of link C-S is 7

Using link state intradomain algorithm, determine the following:

(i) Least cost paths from A to B and from A to C

(ii) Least cost paths from R to P,Q,T and least cost paths from S to P,Q,T

Then using BGP determine the following:

(iii) Intradomain least cost paths advertised by R to B using eBGP

(iv) Intradomain least cost paths advertised by S to C using eBGP

(v) Interdomain least cost paths advertised by B to A using iBGP

(vi) Interdomain least cost paths advertised by C to A using iBGP

Finally determine:

(vii) Least cost interdomain paths set up by A to P,Q,T with their respective costs based on all the advertisements it has received

Solution

1. AFB(5) , AFEC(4)
2. RTP(2), RTQ(4), RT(1)

STP(2), STQ(4), ST(1)

1. Same as in (ii)
2. Same as in (ii)
3. BRTP(11), BRTQ(13), BRT(10)
4. CSTP(9), CSTQ(11), CST(8)
5. AFECSTP(13), AFECSTQ(15), AFECST(12)