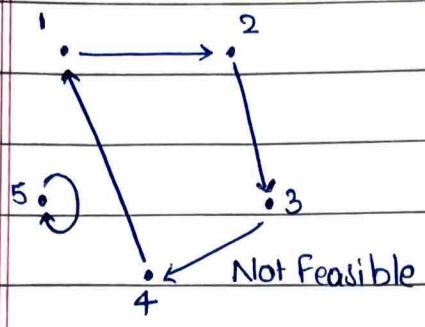


Not Feasible

$U_1 = 0,\ U_2 = 0,\ U_3 = 0,\ U_4 = 0,\ U_5 = 0$

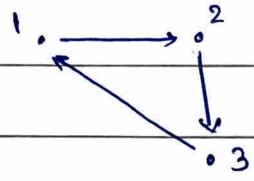
$U_2 - U_3 + 5X_{23} \leq 4$

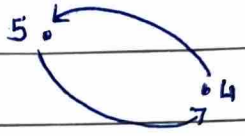
$U_3 - U_4 + 5X_{34} \leq 4$

$U_4 - U_2 + 5X_{42} \leq 4$

$U_2 - U_4 + 5X_{24} \leq 4$

$U_2 - U_5 + 5X_{25} \leq 4$



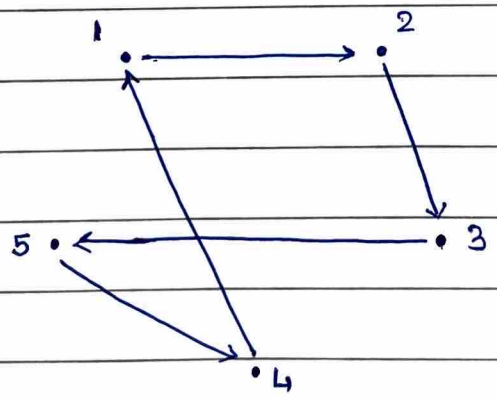


$\cancel{U_4} - \cancel{U_5} + 5X_{45} \leq 4$

$\cancel{U_5} - \cancel{U_5} + 5X_{54} \leq 4$

$5(X_{45} + X_{54}) \leq 4$

This is not possible if both are true, therefore this is not feasible.



This is feasible

$U_1 = 0$

$U_2 = 0$

$U_3 = 1$

$U_4 = 3$

$U_5 = 2$

$U_2 - U_3 + 5X_{23} \leq 4$

$U_2 - U_4 + 5X_{24} \leq 4$

$U_2 - U_5 + 5X_{25} \leq 4$

$U_3 - U_5 + 5X_{35} \leq 4$

$U_3 - U_4 + 5X_{34} \leq 4$

$U_3 - U_2 + 5X_{32} \leq 4$

$U_4 - U_5 + 5X_{45} \leq 4$

$U_4 - U_3 + 5X_{43} \leq 4$

$U_4 - U_2 + 5X_{42} \leq 4$

$U_5 - U_4 + 5X_{54} \leq 4$

$U_5 - U_3 + 5X_{53} \leq 4$

$U_5 - U_2 + 5X_{52} \leq 4$

All these are possible.