Let y_{ij} be the starting time of operation (i,j). Then the formulation is;

Min C_{max}

st $y_{21} - y_{11} \geq 9$, $y_{31} - y_{21} \geq 8$, $y_{22} - y_{12} \geq 5$, $y_{42} - y_{22} \geq 6$, $y_{13} - y_{33} \geq 10$, $y_{23} - y_{13} \geq 4$

$C_{max} - y_{11} \geq 9$, $C_{max} - y_{21} \geq 8$, $C_{max} - y_{31} \geq 4$, $C_{max} - y_{12} \geq 5$, $C_{max} - y_{22} \geq 6$, $C_{max} - y_{42} \geq 3$,

$C_{max} - y_{33} \geq 10$, $C_{max} - y_4 \geq 4$, $C_{max} - y_{23} \geq 9$

$y_{11} - y_{12} \geq 5$ OR $y_{12} - y_{11} \geq 9$

$y_{11} - y_{13} \geq 4$ OR $y_{13} - y_{11} \geq 9$

$y_{12} - y_{13} \geq 4$ OR $y_{13} - y_{12} \geq 5$

$y_{21} - y_{22} \geq 6$ OR $y_{22} - y_{21} \geq 8$

$y_{21} - y_{23} \geq 9$ OR $y_{23} - y_{21} \geq 8$

$y_{22} - y_{23} \geq 9$ OR $y_{23} - y_{22} \geq 6$

$y_{31} - y_{33} \geq 10$ OR $y_{33} - y_{31} \geq 4$

$y_{ij} \geq 0 \forall i, j$

(a) If you apply LPT to this problem you will get the following schedule for each machine with $C_{max} = 23$.
Machine 1: Job 13, Job 2, Job 1
Machine 2: Job 12, Job 3
Machine 3: Job 11, Job 4
Machine 4: Job 10, Job 5
Machine 5: Job 9, Job 6
Machine 6: Job 8, Job 7

(b) It is easy to see that the optimal schedule for this problem is the following sequence with $C_{max} = 18$.
Machine 1: Job 13, Job 5
Machine 2: Job 12, Job 4
Machine 3: Job 11, Job 7
Machine 4: Job 10, Job 6
Machine 5: Job 9, Job 8
Machine 6: Job 1, Job 2, Job 3

Graph G'

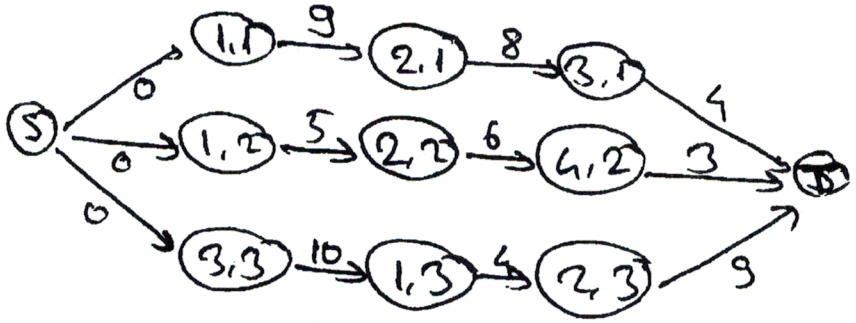

Fig 1.

Iteration 1:

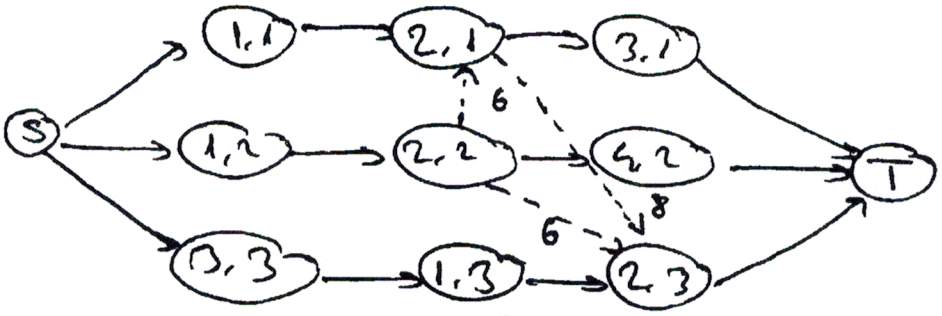

Fig 2.

Iteration 2: