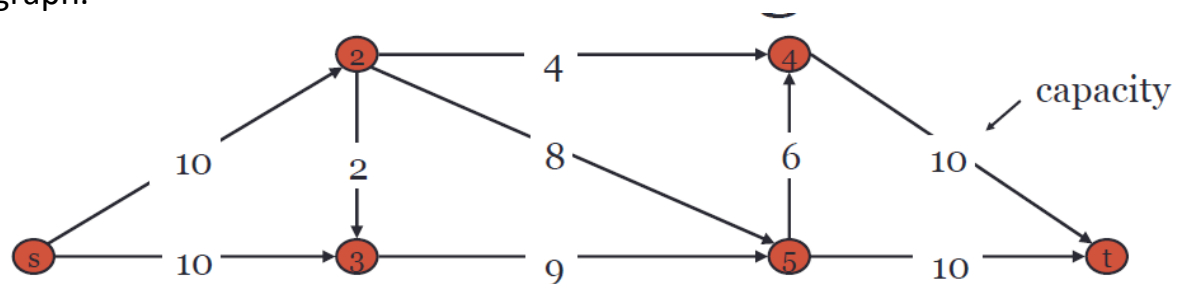


1. Knuth Morris Pratt is an innovative algorithm for string matching. Discuss threadbare the border concept and how it helps in achieving the $O(n)$ complexity. Write the pre-processing step and the main algorithm and explain with the help of the example.
2. With the help of Tree Examples demonstrate Sequential Access, Dynamic Finger and Working Set property of Data structures and how it is implemented using Splay Trees.
3. Write 2-Approximation algorithm for vertex cover problem. What you understand by PTAS and FPTAS in context of approximation algorithmic technique.
4. Apply Ford Fulkerson Algorithm of Max Flow problem on the following graph.



5. Design a Floyd Warshall Algorithm for all pair shortest path problem. What are the major conceptual innovations which makes it more efficient that some of the other algorithms in the similar category.