

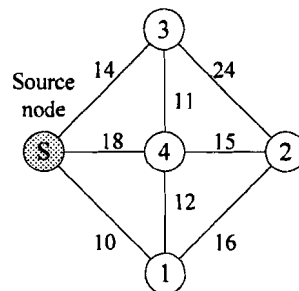
國立台灣科技大學九十七學年度碩士班招生試題

系所組別： 電機工程系碩士班戊組

科 目： 計算機概論

總分 100 分

- How many memory cells can be in a computer's main memory if each cell's address can be represented by two hexadecimal digits? What if four hexadecimal digits are used? (12%)
- Identify two advantages that main memory has over magnetic disk storage. (14%)
- Convert the following formulas from infix to postfix (reverse Polish): (24%)
 - $A + B + C + D + E$
 - $(A + B) * (C + D) + E$
 - $(A * B) + (C * D) + E$
 - $(A - B) * (((C - D * E) / F) / G) * H$
- Construct a minimum cost spanning tree for the undirected connected graph with the cost beside each link shown below by
 - Kruskal's** algorithm without any constrain. (10%)
 - Kruskal's** algorithm with the constrain that a branch contains at most two links. (10%)
 (Note that mark the sequence number beside each link)



- Use C or C++ programming language to write a function to solve for **binary search**. (15%)
- Use **Huffman** algorithm to encode the following message such that it contains the minimum number of bits and the shortest code length. The message is CDBCAAABCCFEDEFAC. (15%)

