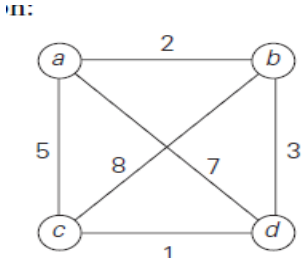
ASSIGNMENT: Analysis and Design of Algorithms

Submission date: Monday 4th by 1pm. Penalty for late submission

Question 1

a. Solve the following instance of traveling salesman problem using
   i. Branch and Bound
   ii. Dynamic programming



b. The following represents sum of subset problem: W_I={1,3,4,5} and M = 11. Apply backtracking to solve an instance of stated problem.
c. What is the complexity category for the following functions?

$$n \ln n \quad (\lg n)^2 \quad 5n^2 + 7n \quad n^{5/2}$$

$$n! \quad 2^{n!} \quad 4^n \quad n^n \quad n^n + \ln n$$

$$5^{\lg n} \quad \lg(n!) \quad (\lg n)! \quad \sqrt{n} \quad e^n \quad 8n + 12 \quad 10^n + n^{20}$$