**HOME WORK**

**Homework based on Lecture 6.1**

1. Which of the problems cannot be solved by backtracking method?  
   a) n-queen problem  
   b) subset sum problem  
   c) hamiltonian circuit problem  
   **d) travelling salesman problem**
2. Backtracking algorithm is implemented by constructing a tree of choices called as?  
   **a) State-space tree**b) State-chart tree  
   c) Node tree  
   d) Backtracking tree
3. In how many directions do queens attack each other?  
   a) 1  
   b) 2  
   **c) 3**  
   d) 4

**Homework based on Lecture 6.2**

1. The problem of finding a path in a graph that visits every vertex exactly once is called?  
   **a) Hamiltonian path problem**  
   b) Hamiltonian cycle problem  
   c) Subset sum problem  
   d) Turnpike reconstruction problem
2. There is no existing relationship between a Hamiltonian path problem and Hamiltonian circuit problem.  
   a) true  
   **b) false**
3. Which of the following problems is similar to that of a Hamiltonian path problem?  
   a) knapsack problem  
   b) closest pair problem  
   **c) travelling salesman problem**  
   d) assignment problem

**Homework based on Lecture 6.3**

1. Branch and bound is a \_\_\_\_\_\_\_\_\_\_  
   **a) problem solving technique**  
   b) data structure  
   c) sorting algorithm  
   d) type of tree
2. Choose the correct statement from the following.  
   a) branch and bound is more efficient than backtracking  
   b) branch and bound is not suitable where a greedy algorithm is not applicable  
   **c) branch and bound divides a problem into at least 2 new restricted sub problems**d) backtracking divides a problem into at least 2 new restricted sub problems

**Homework based on Lecture 6.4**

1. The travelling salesman problem can also be solved in Branch and bound
2. **True**
3. False
4. Travelling Salesman Problem states-
5. A salesman has to visit every city exactly once.
6. He has to come back to the city from where he starts his journey.
7. What is the shortest possible route that the salesman must follow to complete his tour?
8. **All of the mentioned.**