

**SYNERGY INSTITUTE OF ENGINEERING AND TECHNOLOGY, DHENKANAL**

Near NH-55, Banamali Prasad – 759001

**Quiz-IX**

**Full Marks-05**

**Duration-05 Min**

**Subject with Code:** DAA\_LAB (CSPC2206)

**Year & Semester:** 2nd & 4th

**Course & Branch**: B. Tech. & CSE

**Name: Registration No-**

**Roll No-**

Answer All Questions

**Tick the Correct Answer/Answers**

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| **Course Outcome** | **Total Marks** | **Marks Secured** | **Signature of Evaluator** |
| **CO5** | **05** |  |  |

**1.The Subset Sum Problem is a variant of which class of problems? [0.5 Mark][CO5][L3]**  
a) NP-Complete  
b) Greedy  
c) Divide and Conquer  
d) Linear Programming

**2.In the Subset Sum Problem, we are given: [0.5 Mark][CO5][L3]**  
a) A set of subsets  
b) A set of integers and a target sum  
c) A graph and a weight limit  
d) A list of prime numbers

**3.What is the goal of the Subset Sum Problem? [0.5 Mark][CO5][L3]**  
a) Find the maximum subset  
b) Determine if there is a subset whose sum is equal to the target  
c) Minimize the number of elements used  
d) Count all subsets

**4.What is the time complexity of the dynamic programming solution to the Subset Sum Problem? [0.5 Mark][CO5][L3]**  
a) O(n)  
b) O(2ⁿ)  
c) O(n × sum)  
d) O(n²)

**5.Which technique is used in the efficient solution of the Subset Sum Problem? [0.5 Mark][CO5][L3]**  
a) Greedy  
b) Backtracking  
c) Dynamic Programming  
d) Branch and Bound

**6.In the DP approach to Subset Sum, the DP table** dp[i][j] **represents: [0.5 Mark][CO5][L3]**  
a) Whether the sum j can be achieved using first i elements  
b) The number of subsets of size j  
c) The minimum subset sum  
d) The maximum number of subsets

**7.What is the base case for the DP table in Subset Sum? [0.5 Mark][CO5][L3]**  
a) dp[0][0] = false  
b) dp[i][0] = false  
c) dp[0][0] = true  
d) dp[0][i] = true

**8.The Subset Sum Problem is a special case of which other problem?[0.5 Mark][CO5][L3]**  
a) Longest Common Subsequence  
b) 0/1 Knapsack Problem  
c) Matrix Chain Multiplication  
d) Travelling Salesman Problem

**9**.**Which of the following inputs can lead to exponential time in a naive recursive solution? [0.5 Mark][CO5][L3]**  
a) Large target sum only  
b) Large number of elements  
c) Negative integers  
d) Sorted input

**10.If all input values are positive and we want to find if a subset adds up to** target**, which strategy helps? [0.5 Mark][CO5][L3]**  
a) Sorting the input  
b) BFS traversal  
c) Early stopping if current sum exceeds target  
d) Reversing the input