**Algorithms**

**Laboratory Task-6**

**Submission Deadline** – As announced in the class

**Submission Guidelines**-

* Rename the file to your id only. If your id is 18-XXXXX-1, then the file name must be 18-XXXXX-1.docx.
* Must submit within the given deadline in VUES to the section named Lab Tak-1
* Must include resources for all the section named ‘Code’ and ‘Output (screenshot)’ in the table.

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| Question-2 – **Implement 0/1 Knapsack with dynamic programming** |
| **Pseudocode**  **Dynamic-0-1-knapsack (v, w, n, W)**  for w = 0 to W do  c[0, w] = 0  for i = 1 to n do  c[i, 0] = 0  for w = 1 to W do  if wi ≤ w then  if vi + c[i-1, w-wi] then  c[i, w] = vi + c[i-1, w-wi]  else c[i, w] = c[i-1, w]  else  c[i, w] = c[i-1, w] |
| **Code** |
| **Output (Screenshot)** |

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| Question-2 – **Implement Matrix Chain Multiplication (MCM)** |
| **Pseudocode**  **int** **matrixChainMultiplication**(**int**[] p) {  **int** c = p.size()  **int** n = c - 1  **int**[n][n] DP  **for** (**int** w = n to w > 0) {  **int** q = n - w  **for** (**int** j = n to j > q) {  **int** i = j - q - 1  DP[i][j] = INT\_MAX  **for** (**int** k = i to k < j) {  DP[i][j] = min(DP[i][j], DP[i][k] + DP[k + 1][j]  + p[i] \* p[k + 1] \* p[j + 1])  }  }  }  **return** DP[1][n]  } |
| **Code** |
| **Output (Screenshot)** |