Assignment - X

Consider the graph provided in the last assignment (Assignment - IX). In the graph, the partition elements are arranged in non-increasing order. The previous graph was non-weighted graph. Now we assign weight to all the edges. In the graph, there is an edge between the partitions of rank k and $k+1$. Let a partition of rank k be $A = \langle a_1, a_2, \ldots, a_k \rangle$ and a partition of rank $k+1$ be $B = \langle b_1, b_2, \ldots, b_{k+1} \rangle$. Let an edge connects two partitions A and B, then the edge weight is calculated as follows.

$$\texttt{weight} = \sum_{i=1}^{k} a_i \times b_i \tag{1}$$

Write a program to obtain the Minimum Spanning tree (MST) for this graph. Also, obtain the sum of all edge weight in the MST.