

# LIST OF TABLES

---

<b>Table No.</b>	<b>Table Title</b>	<b>Page No.</b>
Table 2.1	LPI value and Ranks of different paths	39
Table 2.2	Initial values of the two arrays	46
Table 2.3	Initializing the LPI value of root node	46
Table 2.4	Status of the two arrays after the neighbours of root are explored	46
Table 2.5	Status of the two arrays after exploring the next node in the priority queue Q	46
Table 2.6	Final values returning the connections in MST	47
Table 2.7	Initial status of the two arrays	51
Table 2.8	LPI value for the root is initialized	52
Table 2.9	Showing the status of the two arrays after the neighbours of the root are explored	52
Table 2.10	Showing the final connections in the fuzzy minimal spanning tree $T_1$ of $G_1$	52
Table 2.11	The energy deviation from unconstrained optimum for increasing delay constraint	75
Table 2.12	The value of edge weights (time taken to travel from one node to another)	85
Table 2.13	The value of node weights (score values)	85
Table 2.14	The total time taken and total collected score for each of the paths	88
Table 2.15	The expected value of the total time taken to traverse the path and the total collected score for each of the paths	89

Table 2.16	The grade of membership of each possible path for both the membership functions of time and score	90
Table 2.17	Showing the ranks of the desirable paths	90
Table 3.1(a)	The values of total time taken and total collected score obtained for each possible path	125
Table 3.1(b)	The expected value for the total time taken and the total collected score of each possible path	126
Table 3.1(c)	The membership value for the total time taken and the total collected score for each possible path	127
Table 3.2	Ranks of the desirable paths	128
Table 3.3	The $d_{ij}$ value of each edge	140
Table 3.4	The value of total distance covered and total score collected on traversing each path	141
Table 3.5	The solution set after discarding those paths that do not satisfy the distance bound ( $D_{max}$ )	142
Table 3.6	Ranks assigned to the paths to determine the most desirable path	142
Table 4.1	Comparison of the mean and maximum value of the total collected score obtained by <i>SEL_OP</i> when executed with four different selection procedures for 160 cities	156
Table 4.2	Comparison of the mean and maximum value of the total collected score obtained by <i>SEL_OP</i> when executed with four different selection procedures for 306 cities	157
Table 4.3	Comparison of maximum, mean and confidence Interval (CI) for mean of scores obtained by <i>RWS_OP</i> (keeping $v_1 = v_N$ i.e., $v_1 = v_N = 1$ ) with those obtained by executing the Ostrowski's algorithm (Please refer (Ostrowski & Koszelew, 2011), their Table 5 for <i>Ostrowski_CG</i> and Table 7 for <i>Ostrowski_IG</i> ) on Real Road Network database with 306 cities of Poland	172
Table 4.4	The Highest Score Collected, Mean of Score Collected, Mean Time to Traverse the Path and % of Time Budget Utilized values obtained by <i>RWS_OP</i> at $\alpha = 0.6$ (keeping $v_1 \neq v_N$ i.e., $v_1 = 1$ and $v_N = 306$ ) when implemented on a Real Road Network database with 306 cities of Poland	176

Table 4.5	The Highest Score Collected, Mean of Score Collected, Mean Time to Traverse the Path and % of Time Budget Utilized values obtained by RWS_OP at $\alpha = 0.6$ (keeping $v_1 \neq v_N$ i.e., $v_1 = 1$ and $v_N = 160$ ) when implemented on a Real Road Network database with 160 cities of Poland	177
Table 4.6	The Highest Score Collected, Mean of Score Collected and confidence interval (CI) for Mean of Score Collected obtained by RWS_OP when implemented on a Real Road Network database with 306 cities of Poland for different $T_{max}$ values at $\alpha = 0.6$ (keeping $v_1 = v_N$ i.e., $v_1 = v_N = 1$ )	183