**Data Analysis** - Sample Date for a **20 Node Network - Single Source to Multiple Destinations**

Hopfield Neural Networks Convergent Algorithms

|  |  |  |
| --- | --- | --- |
| Hopfield Neural Networks | Source to Multiple Destinations | Total Cost |
| Park & Keum | 4-> 8-> 12-> 19-> 18 -> 17 -> 18 -> 13 -> 14 -> 7 -> 6 -> 7 -> 8 -> 9 | **376** |
| Park & Choi | 4-> 8-> 12-> 19-> 18 -> 17 -> 15 -> 6 -> 7 -> 8 -> 9 | **305** |
| Ahn & Ramakrishna | 4-> 8-> 12-> 19-> 18 -> 17 -> 18 -> 19 -> 20 -> 11 -> 12 -> 8 -> 4 -> 5 -> 6 -> 7 -> 8 -> 9 | **536** |
| Ali & Kamoun | 4-> 8-> 12-> 19-> 18 -> 17 -> 15 -> 6 -> 7 -> 8 -> 9 | **305** |

Non-Neural Convergent Algorithms

|  |  |  |  |
| --- | --- | --- | --- |
| Source to Multiple Destinations | Dijkstra Algorithm | Bellman Ford Algorithm | Floyd Warshall Algorithm |
| 4-> 19 | 101 | 101 | 101 |
| 19-> 17 | 53 | 53 | 53 |
| 17-> 6 | 56 | 56 | 56 |
| 6-> 9 | 103 | 103 | 103 |
| Total Cost For Multiple Destination | **313** | **313** | **313** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dijkstra | Bellman Ford | Floyd Warshall | Park & Keum | Ali & Kamoun | Park & Choi | Ahn & Ramakrishna |
| Total Cost For Multiple Destination | **313** | **313** | **313** | **376** | **305** | **305** | **536** |

Total Results for 40 Node Network - Single Source to Single Destination