**14Data Analysis** - Sample Date for a **40 Node Network - Single Source to Multiple Destinations**

Hopfield Neural Networks Convergent Algorithms

|  |  |  |
| --- | --- | --- |
| Hopfield Neural Networks | Source to Multiple Destinations | Total Cost |
| Park & Keum | 1-> 11-> 12-> 8-> 4-> 7 -> 14 -> 15 -> 17 -> 18 -> 19 -> 12 -> 8 -> | **351** |
| Park & Choi | 1-> 11-> 12-> 8-> 4-> 7 -> 14 -> 15 -> 17 -> 18 -> 19 -> 12 -> 8 -> | **351** |
| Ahn & Ramakrishna | 1-> 2-> 3-> 4-> 14-> 15-> 17-> 18-> 19-> 20-> 5 -> 6 -> 15 -> 17 -> 18 -> 19 -> 20 -> 11 -> 12 -> 13 -> 14 -> 7 -> 8 -> | **-** |
| Ali & Kamoun | 1-> 2-> 3-> 4-> 7 -> 14 -> 15 -> 17 -> 18 -> 19 -> 12 -> 8 -> | **301** |

Non-Neural Convergent Algorithms

|  |  |  |  |
| --- | --- | --- | --- |
| Source to Multiple Destinations | Dijkstra Algorithm | Bellman Ford Algorithm | Floyd Warshall Algorithm |
| 1-> 4 | 64 | 64 | 64 |
| 4-> 15 | 60 | 162 | 60 |
| 15-> 19 | 96 | 165 | 96 |
| 19-> 8 | 81 | 81 | 81 |
| Total Cost For Multiple Destination | **301** | **472** | **301** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dijkstra | Bellman Ford | Floyd Warshall | Park & Keum | Ali & Kamoun | Park & Choi | Ahn & Ramakrishna |
| Total Cost For Multiple Destination | 301 | 472 | 301 | **351** | **301** | **351** | **-** |

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