**Data 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**-> 7-> 10-> 12-> **8**-> 12 -> **16** -> 12 -> 17 -> 18 -> 29 -> **32** -> 35 -> 36 -> 37 -> 38 -> **40** -> | **6006** |
| Park & Choi | **1**-> 2-> 3->  **8**-> 12 -> **16** -> 15 -> 26 -> 27 -> 31 -> **32** -> 35 -> 36 -> 37 -> 38 -> **40** -> | **7917** |
| Ahn & Ramakrishna | **1**-> 2-> 3-> **8**-> 12 ->  **16** -> 15 -> 26 -> 27 -> 28 -> 29 ->  **32** -> 35 -> 36 -> 37 -> 39 ->  **40** -> | **8242** |
| Ali & Kamoun | Ali & Kamoun Algorithm does not converge in this condition | **−−** |

Non-Neural Convergent Algorithms

|  |  |  |  |
| --- | --- | --- | --- |
| Source to Multiple Destinations | Dijkstra Algorithm | Bellman Ford Algorithm | Floyd Warshall Algorithm |
| 1-> 8 | 693 | 693 | 693 |
| 8-> 16 | 850 | 850 | 850 |
| 16-> 32 | 1530 | 4717 | 1530 |
| 32-> 40 | 351 | 2315 | 351 |
| Total Cost For Multiple Destination | **3424** | **8575** | **3424** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Dijkstra | Bellman Ford | Floyd Warshall | Park & Keum | Park & Choi | Ahn & Ramakrishna |
| Total Cost For Multiple Destination | 3424 | 8575 | 3424 | **6006** | **7917** | **8242** |

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