**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 | 1-> 11-> 12 -> 13 -> 18 -> 17 -> 15 -> 6 -> 5 | **219** |
| Park & Choi | 1-> 11-> 12 -> 13 -> 18 -> 17 -> 15 -> 6 -> 5 | **219** |
| Ahn & Ramakrishna | 1-> 11-> 20 -> 19 -> 18 -> 19 -> 20 -> 11 -> 12 -> 13 -> 14 -> 15 -> 6 -> 5 | **361** |
| Ali & Kamoun | 1-> 11-> 12 -> 13 -> 18 -> 13 -> 14 -> 15 -> 6 -> 5 - | **264** |

Non-Neural Convergent Algorithms

|  |  |  |  |
| --- | --- | --- | --- |
| Source to Multiple Destinations | Dijkstra Algorithm | Bellman Ford Algorithm | Floyd Warshall Algorithm |
| 1-> 11 | 41 | 41 | 41 |
| 11 -> 18 | 70 | 70 | 70 |
| 18 -> 15 | 40 | 40 | 40 |
| 15 -> 5 | 82 | 82 | 82 |
| Total Cost For Multiple Destination | **233** | **233** | **233** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dijkstra | Bellman Ford | Floyd Warshall | Park & Keum | Ali & Kamoun | Park & Choi | Ahn & Ramakrishna |
| Total Cost For Multiple Destination | 233 | 233 | 233 | **219** | **264** | **219** | **361** |

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