Example : Edge Recombination

Element	Edges	Element	Edges
1	2,5,4,9	6	2,5+,7
2	1,3,6,8	7	3,6,8+
3	2,4,7,9	8	2,7+, 9
4	1,3,5,9	9	1,3,4,8
5	1,4,6+		

Solution ① Random choose initiation

Choice	Element selected	Reason	Partial result
All	1	Random	1

② Strike all 1 in others Edges

we can choose 2 5 4 9

2 - 3   (5 - 2) ✓   4 - 3   9 - 3

Element	Edges	Element	Edges
1	2,5,4,9	6	2,5+,7
2	①3,6,8	7	3,6,8+
3	2,4,7,9	8	2,7+, 9
4	①3,5,9	9	①3,4,8
5	①4,6+		

Choice	Element selected	Reason	Partial result
All	1	Random	1
2549	5	Shortest list	1 5

③ strike. 5; choose common edge [father] first
choose shortest list [son]

Element	Edges	Element	Edges
1	2,4,9	6	2,7
2	3,6,8	7	3,6,8+
3	2,4,7,9	8	2,7+, 9
4	3,9	9	3,4,8
5	4,6+		

△ 6 / ✓

Choice	Element selected	Reason	Partial result
All	1	Random	1
2549	5	shortest list	1 5
46	6	common edge	156

④ strike 6

Element	Edges	Element	Edges
1	2,4,9	6	2,7
2	3,6,8	7	3,6,8+
3	2,4,7,9	8	2,7+, 9
4	3,9	9	3,4,8
5	4,6		

father → don't have "+"
Son → list length =2
ignore son "+"

Choice	Element selected	Reason	Partial result
All	1	Random	1
2549	5	shortest list	1 5
46	6	common edge	156

| 2 7 | 2 | Random choice. | 1562 |
| | | (both have two items in list) | |

⑤ Strike 2

Choice	Element selected	Reason	Partial result
All	1	Random	1
2 5 4 9	5	Shortest list	1 5
4 6	6	Common edge	156
2 7	2	Random choice. (both have two items in list)	1562
3 8	8	Shortest list	15628
7 9	7	common edge	156287
3	3	only item in list	1562873

⑥

Element	Edges	Element	Edges
1	2,5,4,9	6	2,5,1,7
2	6,3,8	7	3,6,9
3	2,4,6,9	8	7 ± 9
4	6,8,9	9	2,3,4,5
5	1,4,6		

Choice	Element selected	Reason	Partial result
All	1	Random	1
2549	5	Shortest list	1 5
4 6	6	common edge	156
2 7	2	Random choice. (both have two items in list)	1562
3 8	8	shortest list	15628
79	7	shortest list	156287
3	3	only item in list	1562873
49	9	Random choice	15628739
4	4	Last element	156287394