

TYPEWRITER QAP INSTANCES

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TABLE 1

	obj	sol	time	eff
Heuristic bur26a	5,894,908	5 10 11 7 1 26 9 13 2 20 21 14 17 6 15 25 23 12 4 8 3 19 16 24 22 18	0	0.090
Sim. Annealing bur26a	5,410,015	6 12 2 26 7 16 24 21 15 1 18 14 20 19 4 11 8 9 5 22 23 3 13 10 17 25	6.440	0
Tabu bur26a	5,466,043	6 16 26 1 11 2 7 4 13 12 9 14 19 5 15 21 8 20 18 10 3 24 25 17 23 22	17.750	0.010
Genetic bur26a	5,583,418	21 10 25 7 8 26 15 13 1 24 12 2 18 6 19 17 5 9 20 11 14 23 22 4 3 16	19.110	0.030
Optimal bur26a	5,426,670	11 8 17 5 12 9 4 15 13 22 3 6 7 16 2 23 21 10 19 18 14 26 25 24 20 1	0	0

TABLE 2

	obj	sol	time	eff
Heuristic bur26b	4,183,373	5 10 11 7 1 26 9 13 2 20 21 14 17 6 15 25 23 12 4 8 3 19 16 24 22 18	0	0.100
Sim. Annealing bur26b	3,811,448	2 22 23 11 7 25 24 15 16 1 3 18 14 19 12 21 9 5 20 6 8 13 26 4 17 10	6	0
Tabu bur26b	3,855,980	6 16 11 10 1 7 2 13 23 12 9 14 19 5 15 21 8 20 18 24 3 26 17 25 22 4	18.710	0.010
Genetic bur26b	3,927,696	16 11 24 12 22 3 1 25 10 18 4 19 14 2 8 26 9 5 15 13 7 17 20 6 23 21	18.910	0.030
Optimal bur26b	3,817,852	12 25 17 5 13 7 4 15 11 20 1 16 26 6 3 24 22 10 19 18 14 9 8 23 21 2	0	0

TABLE 3

	obj	sol	time	eff
Heuristic bur26c	6,027,083	7 18 11 17 2 12 26 6 4 23 15 13 16 10 3 19 21 9 8 1 5 14 25 22 20 24	0	0.110
Sim. Annealing bur26c	5,515,749	7 12 2 23 13 21 8 25 4 15 19 14 5 18 3 16 1 9 20 6 24 26 10 17 22 11	6.440	0.020
Tabu bur26c	5,434,479	13 2 7 16 3 17 10 25 21 1 20 18 19 14 12 11 15 9 5 4 8 6 23 22 26 24	17.670	0
Genetic bur26c	5,582,392	12 11 13 7 3 24 15 2 9 10 21 14 19 18 17 25 1 20 4 26 6 23 8 22 16 5	18.900	0.030
Optimal bur26c	5,426,795	17 2 1 15 19 21 24 12 10 8 6 3 4 18 9 5 25 13 11 14 16 20 23 22 7 26	0	0

TABLE 4

	obj	sol	time	eff
Heuristic bur26d	4,235,430	7 18 11 17 2 12 26 6 4 23 15 13 16 10 3 19 21 9 8 1 5 14 25 22 20 24	0	0.110
Sim. Annealing bur26d	3,900,897	26 23 17 2 3 8 21 25 4 16 5 14 18 19 12 15 1 9 20 10 13 24 7 6 11 22	6.350	0.020
Tabu bur26d	3,887,485	2 22 13 17 19 3 6 23 21 25 15 18 8 1 26 4 20 9 5 11 12 14 24 10 7 16	16.740	0.020
Genetic bur26d	3,939,960	22 7 12 4 16 17 26 1 13 15 14 18 8 20 6 21 5 3 24 10 11 23 25 19 9 2	18.900	0.030
Optimal bur26d	3,821,225	18 4 2 23 19 21 24 7 10 25 22 11 1 17 9 5 26 13 12 14 8 20 15 3 16 6	0	0

TABLE 5

	obj	sol	time	eff
Heuristic bur26e	5,989,429	13 5 16 7 1 26 19 25 4 15 22 9 12 2 11 17 14 8 6 10 3 18 24 21 20 23	0	0.110
Sim. Annealing bur26e	5,436,893	21 5 8 10 2 13 6 3 4 19 9 1 15 16 7 12 14 18 20 25 23 11 26 24 17 22	6.310	0.010
Tabu bur26e	5,464,563	3 2 16 10 14 7 4 8 12 19 21 5 9 1 6 13 20 15 18 25 11 26 24 23 22 17	16.620	0.010
Genetic bur26e	5,554,938	22 20 9 8 16 24 23 19 15 10 12 13 3 14 7 1 21 18 5 2 4 6 26 17 25 11	19	0.030
Optimal bur26e	5,386,879	9 23 15 1 19 20 4 16 18 21 25 13 2 3 10 5 8 12 14 11 17 24 26 22 7 6	0	0

TABLE 6

	obj	sol	time	eff
Heuristic bur26f	4,245,389	13 5 16 7 1 26 19 25 4 15 22 9 12 2 11 17 14 8 6 10 3 18 24 21 20 23	0	0.120
Sim. Annealing bur26f	3,837,487	10 7 24 25 21 13 16 4 6 3 9 20 1 5 8 12 14 19 18 26 2 15 11 23 22 17	6.390	0.010
Tabu bur26f	3,873,732	25 7 16 2 19 22 4 24 8 15 9 21 14 5 11 13 20 1 18 10 3 6 23 26 12 17	16.830	0.020
Genetic bur26f	3,883,898	26 6 3 12 13 2 17 10 5 16 14 11 19 21 23 1 4 9 15 25 18 7 20 22 8 24	19.700	0.030
Optimal bur26f	3,782,044	9 21 22 24 19 2 3 25 18 8 26 14 1 15 10 5 4 11 13 12 17 23 6 20 16 7	0	0

TABLE 7

	obj	sol	time	eff
Heuristic bur26g	11,094,283	2 17 5 7 1 20 8 10 3 21 18 14 16 6 13 15 22 12 4 9 25 11 19 24 23 26	0	0.100
Sim. Annealing bur26g	10,157,128	7 12 8 11 2 16 6 25 1 3 19 14 18 20 4 21 9 5 15 26 23 10 13 22 17 24	6.370	0
Tabu bur26g	10,338,215	6 13 16 23 19 26 8 20 11 7 18 14 5 9 22 15 1 12 4 3 25 10 17 24 21 2	17.180	0.020
Genetic bur26g	10,416,632	12 22 16 2 18 24 26 17 19 25 20 10 14 9 4 11 15 1 5 6 13 8 23 7 3 21	18.870	0.030
Optimal bur26g	10,117,172	9 1 24 12 19 20 11 8 17 25 2 15 5 23 16 21 26 14 18 13 10 3 4 6 7 22	0	0

TABLE 8

	obj	sol	time	eff
Heuristic bur26h	7,930,752	2 17 5 7 1 20 8 10 3 21 18 14 16 6 13 15 22 12 4 9 25 11 19 24 23 26	0	0.120
Sim. Annealing bur26h	7,146,268	8 23 26 11 22 25 6 15 21 1 18 14 19 20 12 3 4 5 9 10 16 7 2 13 24 17	6.160	0.010
Tabu bur26h	7,212,837	21 25 16 6 19 2 11 23 13 20 9 15 5 18 3 4 8 12 14 26 1 10 17 24 7 22	17.270	0.020
Genetic bur26h	7,343,621	11 24 26 18 4 1 17 5 6 25 8 19 3 14 7 16 15 21 9 22 12 13 20 10 23 2	19.260	0.030
Optimal bur26h	7,098,658	9 2 22 11 19 5 13 8 17 6 1 4 3 15 16 20 26 14 18 12 10 21 23 25 7 24	0	0