output

| | | | | | | Local Search | | GRASP | | |
|------------|---------|----------|------------------------|-------|-------|-------------------------|-------|-------------------|-------|-------------|
| | Problem | | Constructive Algorithm | | | Simple Local or Local-1 | | GRASP-1 | | |
| Name | V or n | <u> </u> | | | | | | No. of Iterations | | Upper Bound |
| G1 | 800 | 19176 | 11024 | 11292 | 11184 | 118 | 11388 | 50 | 11467 | 12078 |
| G2 | 800 | 19176 | 11042 | 11260 | 11150 | 114 | 11385 | 50 | 11498 | 12084 |
| G3 | 800 | 19176 | 11018 | 11239 | 11155 | 115 | 11379 | 20 | 11451 | 12077 |
| G4 | 800 | 19176 | 11023 | 11300 | 11204 | 101 | 11405 | 20 | 11458 | |
| G5 | 800 | 19176 | 11024 | 11265 | 11131 | 120 | 11377 | 20 | 11432 | |
| G6 | 800 | 19176 | 1543 | 1846 | 1671 | 120 | 1919 | 20 | 2009 | |
| G7 | 800 | 19176 | 1390 | 1587 | 1479 | 137 | 1764 | 20 | 1827 | |
| G8 | 800 | 19176 | 1363 | 1612 | 1466 | 139 | 1751 | 20 | 1829 | |
| G9 | 800 | 19176 | 1420 | 1678 | 1520 | 137 | 1796 | 20 | 1880 | |
| G10 | 800 | 19176 | 1384 | 1568 | 1457 | 135 | 1737 | 20 | 1816 | |
| G11 | 800 | 1600 | 408 | 482 | 440 | 11 | 461 | 20 | 494 | 627 |
| G12 | 800 | 1600 | 398 | 486 | 433 | 10 | 452 | 20 | 478 | 621 |
| G13 | 800 | 1600 | 420 | 496 | 447 | 12 | 470 | 20 | 508 | 645 |
| G14 | 800 | 4694 | 2871 | 2949 | 2942 | 24 | 2972 | 20 | 2985 | 3187 |
| G15 | 800 | 4661 | 2846 | 2948 | 2909 | 26 | 2943 | 20 | 2958 | 3169 |
| G16 | 800 | 4672 | 2856 | 2915 | 2917 | 27 | 2953 | 20 | 2975 | 3172 |
| G17 | 800 | 4667 | 2850 | 2925 | 2911 | 29 | 2947 | 20 | 2970 | |
| G18 | 800 | 4694 | 703 | 850 | 756 | 56 | 848 | 20 | 911 | |
| G19 | 800 | 4661 | 617 | 781 | 663 | 60 | 762 | 20 | 809 | |
| G20 | 800 | 4672 | 652 | 775 | 698 | 58 | 793 | 20 | 868 | |
| G21 | 800 | 4667 | 635 | 795 | 694 | 61 | 793 | 20 | 847 | |
| G22 | 2000 | 19990 | 12362 | 12780 | 12659 | 141 | 12904 | 20 | 12992 | 14123 |
| G23 | 2000 | 19990 | 12364 | 12852 | 12634 | 147 | 12893 | 20 | 12961 | 14129 |
| G24 | 2000 | 19990 | 12362 | 12777 | 12614 | 162 | 12896 | 20 | 12964 | 14131 |
| G25 | 2000 | 19990 | 12361 | 12900 | 12637 | 156 | 12903 | 20 | 13039 | |
| G26 | 2000 | 19990 | 12350 | 12793 | 12694 | 126 | 12909 | 20 | 12970 | |
| G27 | 2000 | 19990 | 2297 | 2704 | 2527 | 192 | 2869 | 20 | 2963 | |
| G28 | 2000 | 19990 | 2278 | 2700 | 2480 | 197 | 2824 | 20 | 2898 | |
| G29 | 2000 | 19990 | 2377 | 2735 | 2610 | 184 | 2937 | 20 | 3085 | |
| G30 | 2000 | 19990 | 2388 | 2750 | 2583 | 188 | 2922 | 20 | 3018 | |
| G31 | 2000 | 19990 | 2312 | 2685 | 2447 | 222 | 2843 | 20 | 2923 | |
| G32 | 2000 | 4000 | 1018 | 1188 | 1091 | 27 | 1146 | 20 | 1216 | 1560 |
| G33 | 2000 | 4000 | 979 | 1170 | 1061 | 29 | 1120 | 20 | 1216 | 1537 |
| G34 | 2000 | 4000 | 970 | 1170 | 1033 | 35 | 1103 | 20 | 1182 | 1541 |
| G35 | 2000 | 11778 | 7199 | 7391 | 7369 | 56 | 7442 | 20 | 7467 | 8000 |
| G36 | 2000 | 11776 | 7199 | 7415 | 7357 | 61 | 7442 | 20 | 7457 | 7996 |
| G36 G37 | 2000 | 11785 | 7175 | 7387 | 7341 | 70 | 7433 | 20 | 7459 | 8009 |
| G38 | 2000 | 11779 | 7189 | 7374 | 7374 | 59 | 7432 | 20 | 7464 | 8009 |
| | | | | | | | | | | |
| G39 | 2000 | 11778 | 1688 | 2014 | 1899 | 119 | 2091 | 20 | 2152 | |
| G40 | 2000 | 11766 | 1667 | 2048 | 1714 | 173 | 2010 | 20 | 2124 | |
| G41 | 2000 | 11785 | 1667 | 2054 | 1720 | 168 | 2006 | 20 | 2091 | |
| G42 | 2000 | 11779 | 1726 | 2082 | 1925 | 132 | 2139 | 20 | 2225 | 7007 |
| G43 | 1000 | 9990 | 6177 | 6387 | 6279 | 85 | 6427 | 20 | 6507 | 7027 |
| G44 | 1000 | 9990 | 6181 | 6399 | 6298 | 84 | 6439 | 20 | 6493 | 7022 |
| G45 | 1000 | 9990 | 6167 | 6364 | 6263 | 92 | 6427 | 20 | 6507 | 7020 |
| G46 | 1000 | 9990 | 6173 | 6397 | 6330 | 65 | 6442 | 20 | 6506 | |
| G47 | 1000 | 9990 | 6166 | 6366 | 6326 | 72 | 6449 | 20 | 6503 | 2222 |
| G48 | 3000 | 6000 | 4914 | 6000 | 6000 | 1 | 6000 | 20 | 6000 | 6000 |
| G49 | 3000 | 6000 | 4906 | 6000 | 6000 | 1 | 6000 | 20 | 6000 | 6000 |
| G50 | 3000 | 6000 | 4905 | 5880 | 5842 | 3 | 5846 | 20 | 5880 | 5988 |
| G51 | 1000 | 5909 | 3600 | 3706 | 3681 | 35 | 3726 | 20 | 3748 | |
| G52 | 1000 | 5916 | 3604 | 3699 | 3672 | 41 | 3724 | 20 | 3756 | |
| G53 | 1000 | 5914 | 3613 | 3704 | 3685 | 32 | 3726 | 20 | 3738 | |
| G54 | 1000 | 5916 | 3599 | 3694 | 3680 | 31 | 3721 | 20 | 3744 | |