|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Danzig \_algorithm  Single-point crossover  Point mutation  Betta-Tournament | Danzig \_algorithm  Single-point crossover  Point mutation  Linear-rank | Danzig \_algorithm  Single-point crossover  Inversion  Betta-Tournament | Danzig \_algorithm  Single-point crossover  Inversion  Linear-rank | Danzig \_algorithm  Single-point crossover  Translocation  Betta-Tournament | Danzig \_algorithm  Single-point crossover  Translocation  Linear-rank | Danzig \_algorithm  Single-point crossover  Saltation  Betta-Tournament | Danzig \_algorithm  Single-point crossover  Saltation  Linear-rank | Danzig \_algorithm  Two-point crossover  Point mutation  Betta-Tournament | Danzig \_algorithm  Two-point crossover  Point mutation  Linear-rank | Danzig \_algorithm  Two-point crossover  Inversion  Betta-Tournament | Danzig \_algorithm  Two-point crossover  Inversion  Linear-rank | Danzig \_algorithm  Two-point crossover  Translocation  Betta-Tournament | Danzig \_algorithm  Two-point crossover  Translocation  Linear-rank | Danzig \_algorithm  Two-point crossover  Saltation  Betta-Tournament | Danzig \_algorithm  Two-point crossover  Saltation  Linear-rank |
| 708 | 721 | 683 | 721 | 719 | 721 | 721 | 721 | 719 | 721 | 710 | 721 | 721 | 721 | 721 | 721 |
| 452 | 567 | 402 | 555 | 504 | 534 | 539 | 519 | 477 | 535 | 488 | 520 | 503 | 555 | 473 | 554 |
| 7 | 5 | 2 | 3 | 5 | 3 | 3 | 1 | 3 | 4 | 4 | 7 | 3 | 4 | 2 | 4 |
| 11,9 | 7,7 | 7,5 | 7,7 | 2,8 | 6,9 | 8,9 | 5,1 | 10,3 | 5,5 | 4,9 | 10,4 | 3 | 6,9 | 10,6 | 5 |
| Danzig \_algorithm  Uniform crossover  Point mutation  Betta-Tournament | Danzig \_algorithm  Uniform crossover  Point mutation  Linear-rank | Danzig \_algorithm  Uniform crossover  Inversion  Betta-Tournament | Danzig \_algorithm  Uniform crossover  Inversion  Linear-rank | Danzig \_algorithm  Uniform crossover  Translocation  Betta-Tournament | Danzig \_algorithm  Uniform crossover  Translocation  Linear-rank | Danzig \_algorithm  Uniform crossover  Saltation  Betta-Tournament | Danzig \_algorithm  Uniform crossover  Saltation  Linear-rank | Random \_algorithm  Single-point crossover  Point mutation  Betta-Tournament | Random \_algorithm  Single-point crossover  Point mutation  Linear-rank | Random \_algorithm  Single-point crossover  Inversion  Betta-Tournament | Random \_algorithm  Single-point crossover  Inversion  Linear-rank | Random \_algorithm  Single-point crossover  Translocation  Betta-Tournament | Random \_algorithm  Single-point crossover  Translocation  Linear-rank | Random \_algorithm  Single-point crossover  Saltation  Betta-Tournament | Random \_algorithm  Single-point crossover  Saltation  Linear-rank |
| 704 | 721 | 721 | 721 | 721 | 721 | 717 | 721 | 717 | 721 | 697 | 721 | 662 | 721 | 675 | 721 |
| 449 | 474 | 523 | 538 | 491 | 476 | 512 | 515 | 482 | 498 | 487 | 520 | 520 | 532 | 494 | 558 |
| 2 | 1 | 4 | 5 | 3 | 6 | 4 | 6 | 4 | 6 | 27 | 5 | 1 | 4 | 40 | 5 |
| 7,1 | 5,9 | 7,7 | 9,3 | 3 | 7,1 | 6,7 | 6,5 | 10,8 | 9 | 9,4 | 11,1 | 1,9 | 7,3 | 10,4 | 7,8 |
| Random \_algorithm  Two-point crossover  Point mutation  Betta-Tournament | Random \_algorithm  Two-point crossover  Point mutation  Linear-rank | Random \_algorithm  Two-point crossover  Inversion  Betta-Tournament | Random \_algorithm  Two-point crossover  Inversion  Linear-rank | Random \_algorithm  Two-point crossover  Translocation  Betta-Tournament | Random \_algorithm  Two-point crossover  Translocation  Linear-rank | Random \_algorithm  Two-point crossover  Saltation  Betta-Tournament | Random \_algorithm  Two-point crossover  Saltation  Linear-rank | Random \_algorithm  Uniform crossover  Point mutation  Betta-Tournament | Random \_algorithm  Uniform crossover  Point mutation  Linear-rank | Random \_algorithm  Uniform crossover  Inversion  Betta-Tournament | Random \_algorithm  Uniform crossover  Inversion  Linear-rank | Random \_algorithm  Uniform crossover  Translocation  Betta-Tournament | Random \_algorithm  Uniform crossover  Translocation  Linear-rank | Random \_algorithm  Uniform crossover  Saltation  Betta-Tournament | Random \_algorithm  Uniform crossover  Saltation  Linear-rank |
| 721 | 721 | 721 | 721 | 681 | 721 | 717 | 721 | 704 | 721 | 721 | 721 | 721 | 721 | 717 | 721 |
| 443 | 513 | 517 | 576 | 495 | 513 | 451 | 518 | 512 | 571 | 519 | 529 | 539 | 530 | 534 | 525 |
| 3 | 4 | 4 | 5 | 2 | 4 | 5 | 5 | 2 | 3 | 3 | 3 | 3 | 5 | 3 | 5 |
| 4,8 | 6,8 | 6,3 | 7,4 | 2,6 | 8,3 | 11 | 5,5 | 5,6 | 5,5 | 6,8 | 7,5 | 2,4 | 7,2 | 3,5 | 6,2 |