**Report**

**Offline on Exam Scheduling**

**using Local Search**

## 

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## **Date of Submission:** 23rd January 2023

## **Submitted by:**

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L-3/T-2

CSE-B1

### **Tables:**

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| **Benchmark data** | **Known Best Solution** | | **Scheme - 1 :** Largest Degree + Kempe + Pair Swap + Exponential Penalty | | | |
| **Timeslots** | **Penalty** | **Timeslots** | **Penalty** | | |
| **After Constructive Heuristic** | **After Kempe** | **After Pairswap** |
| **CAR-F-92** | 32 | 3.74 | 32 | 10.615 | 5.791 | 5.593 |
| **CAR-S-91** | 35 | 4.42 | 34 | 11.496 | 7.458 | 7.067 |
| **KFU-S-93** | 20 | 12.96 | 20 | 46.516 | 19.809 | 18.591 |
| **TRE-S-92** | 23 | 7.75 | 23 | 15.901 | 10.300 | 9.861 |
| **YOR-F-83** | 21 | 34.84 | 23 | 64.689 | 38.271 | 37.945 |

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| **Benchmark data** | **Known Best Solution** | | **Scheme - 2 :** DSatur + Kempe + Pairs Swap + Exponential Penalty | | | |
| **Timeslots** | **Penalty** | **Timeslots** | **Penalty** | | |
| **After Constructive Heuristic** | **After Kempe** | **After Pairswap** |
| **CAR-F-92** | 32 | 3.74 | 36 | 9.739 | 4.774 | 4.606 |
| **CAR-S-91** | 35 | 4.42 | 42 | 11.157 | 5.573 | 5.365 |
| **KFU-S-93** | 20 | 12.96 | 22 | 41.079 | 16.797 | 15.793 |
| **TRE-S-92** | 23 | 7.75 | 26 | 14.069 | 9.219 | 8.852 |
| **YOR-F-83** | 21 | 34.84 | 26 | 51.514 | 33.718 | 31.876 |

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| **Benchmark data** | **Known Best Solution** | | **Scheme - 3 :** Largest Enrollment + Kempe + Pair Swap + Exponential Penalty | | | |
| **Timeslots** | **Penalty** | **Timeslots** | **Penalty** | | |
| **After Constructive Heuristic** | **After Kempe** | **After Pairswap** |
| **CAR-F-92** | 32 | 3.74 | 35 | 10.696 | 5.079 | 4.780 |
| **CAR-S-91** | 35 | 4.42 | 36 | 13.781 | 6.424 | 6.275 |
| **KFU-S-93** | 20 | 12.96 | 21 | 54.512 | 16.497 | 15.349 |
| **TRE-S-92** | 23 | 7.75 | 22 | 16.330 | 10.939 | 10.467 |
| **YOR-F-83** | 21 | 34.84 | 25 | 63.271 | 34.923 | 34.346 |

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| **Benchmark data** | **Known Best Solution** | | **Scheme - 4 :** Random + Kempe + Pair Swap + Exponential Penalty | | | |
| **Timeslots** | **Penalty** | **Timeslots** | **Penalty** | | |
| **After Constructive Heuristic** | **After Kempe** | **After Pairswap** |
| **CAR-F-92** | 32 | 3.74 | 45 | 7.715 | 3.926 | 3.682 |
| **CAR-S-91** | 35 | 4.42 | 47 | 9.598 | 4.923 | 4.661 |
| **KFU-S-93** | 20 | 12.96 | 26 | 37.453 | 14.436 | 11.529 |
| **TRE-S-92** | 23 | 7.75 | 28 | 12.879 | 7.984 | 7.496 |
| **YOR-F-83** | 21 | 34.84 | 28 | 50.573 | 29.465 | 28.878 |

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| **Benchmark data** | **Known Best Solution** | | **Scheme - 5 :** Larges tDegree + Kempe + Pair Swap + Linear Penalty | | | |
| **Timeslots** | **Penalty** | **Timeslots** | **Penalty** | | |
| **After Constructive Heuristic** | **After Kempe** | **After Pairswap** |
| **CAR-F-92** | 32 | - | 32 | 6.762 | 3.796 | 3.456 |
| **CAR-S-91** | 35 | - | 34 | 7.405 | 4.793 | 4.390 |
| **KFU-S-93** | 20 | - | 20 | 28.733 | 12.762 | 11.542 |
| **TRE-S-92** | 23 | - | 23 | 10.142 | 7.051 | 6.204 |
| **YOR-F-83** | 21 | - | 23 | 40.757 | 25.747 | 24.774 |