**OFFLINE 3 REPORT**

**EXAM SCHEDULING USING LOCAL SEARCH**

Submitted By

Ishika Tarin Ime

ID: 1805092

Section: B2

Level 3/ Term 2

| Benchmark Data | Known Best Solution | |
| --- | --- | --- |
|  | Timeslots | Penalty |
| CARF92 | 32 | 3.74 |
| CARS91 | 35 | 4.42 |
| KFU93 | 20 | 12.96 |
| TRE92 | 23 | 7.75 |
| YOR83 | 21 | 34.84 |
| Table 1: Best Known Solution for Exponential Penalty | | |

| Benchmark Data | Scheme-1  Largest-degree + Kempe + Pair-swap | | | |
| --- | --- | --- | --- | --- |
|  | Timeslots | Penalty | | |
| After Largest Degree | After Kempe | After Pair-swap |
| CARF92 | 31 | 10.390 | 7.548 | 7.016 |
| CARS91 | 34 | 11.955 | 8.721 | 8.364 |
| KFU93 | 19 | 46.608 | 26.549 | 23.038 |
| TRE92 | 21 | 15.954 | 13.692 | 12.970 |
| YOR83 | 22 | 65.577 | 44.976 | 42.406 |
| Table 2: Scheme-1 For Exponential Penalty | | | | |

| Benchmark Data | Scheme-2  D-Saturation + Kempe + Pair-swap | | | |
| --- | --- | --- | --- | --- |
|  | Timeslots | Penalty | | |
| After D-Saturation | After Kempe | After Pair-swap |
| CARF92 | 31 | 10.749 | 7.920 | 7.484 |
| CARS91 | 33 | 11.759 | 8.660 | 8.311 |
| KFU93 | 19 | 38.790 | 24.415 | 20.938 |
| TRE92 | 21 | 15.990 | 13.453 | 12.827 |
| YOR83 | 22 | 65.248 | 46.893 | 43.561 |
| Table 3: Scheme-2 For Exponential Penalty | | | | |

| Benchmark Data | Scheme-3  Largest-enrollment + Kempe + Pair-swap | | | |
| --- | --- | --- | --- | --- |
|  | Timeslots | Penalty | | |
| After Largest enrollment | After Kempe | After Pair-swap |
| CARF92 | 33 | 10.698 | 6.430 | 6.059 |
| CARS91 | 35 | 13.758 | 8.074 | 7.532 |
| KFU93 | 20 | 54.592 | 25.499 | 21.689 |
| TRE92 | 21 | 16.828 | 13.617 | 12.533 |
| YOR83 | 22 | 63.735 | 48.950 | 45.139 |
| Table 4: Scheme-3 For Exponential Penalty | | | | |

| Benchmark Data | Scheme-4  Random + Kempe + Pair-swap | | | |
| --- | --- | --- | --- | --- |
|  | Timeslots | Penalty | | |
| After Random | After Kempe | After Pair-swap |
| CARF92 | 43 | 8.129 | 5.510 | 4.755 |
| CARS91 | 47 | 9.773 | 6.465 | 5.767 |
| KFU93 | 24 | 33.311 | 21.701 | 18.929 |
| TRE92 | 28 | 13.073 | 10.442 | 9.070 |
| YOR83 | 26 | 47.874 | 38.652 | 33.274 |
| Table 5: Scheme-4 For Exponential Penalty | | | | |

| Benchmark Data | Scheme-5 (Linear Penalty)  DSaturation + Kempe + Pair-swap | | | |
| --- | --- | --- | --- | --- |
|  | Timeslots | Penalty (Linear) | | |
| After DSaturation | After Kempe | After Pair-swap |
| CARF92 | 31 | 6.807 | 4.725 | 4.449 |
| CARS91 | 33 | 7.489 | 5.911 | 5.633 |
| KFU93 | 19 | 25.169 | 17.197 | 16.073 |
| TRE92 | 21 | 10.166 | 8.339 | 7.926 |
| YOR83 | 22 | 41.619 | 31.180 | 28.512 |
| Table 6: Scheme-5 For Linear Penalty | | | | |