

**Report on**  
**Local Search Offline**

**Course: CSE 318**  
**Course Title: Artificial Intelligence Sessional**

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**Data set for Exponential Penalty:**

Benchmark Data	Known Best Solution		Scheme -1 Largest Degree + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Largest Degree	After Kempe	After Pairswap
CARF92	32	3.74	32	10.5652	5.3171	5.1731
CARS91	35	4.42	34	11.6290	6.7651	6.6325
KFUS93	20	12.96	20	46.3126	16.9574	15.5992
TRES92	23	7.75	22	15.8888	10.5021	10.3349
YORF83	21	34.84	23	65.6312	36.4878	35.9862

Benchmark Data	Known Best Solution		Scheme -2 Saturation Degree + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Saturation Degree	After Kempe	After Pairswap
CARF92	32	3.74	29	10.0786	6.1518	5.9757
CARS91	35	4.42	30	11.9285	8.0895	7.9728
KFUS93	20	12.96	19	46.9033	17.1060	16.8613
TRES92	23	7.75	23	16.0064	10.0738	9.7593
YORF83	21	34.84	20	64.2147	44.8778	44.6589

Benchmark Data	Known Best Solution		Scheme -3 Largest Enrollment + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Largest Enrollment	After Kempe	After Pairswap
CARF92	32	3.74	34	10.7473	4.7043	4.5511
CARS91	35	4.42	36	13.7767	5.9826	5.8460
KFUS93	20	12.96	21	54.5941	14.1049	13.3369
TRES92	23	7.75	22	16.8001	10.6229	10.4143
YORF83	21	34.84	23	63.7949	35.7789	35.4750

Benchmark Data	Known Best Solution		Scheme -4 Random Ordering + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Random Ordering	After Kempe	After Pairswap
CARF92	32	3.74	43	7.6689	3.4356	3.2640
CARS91	35	4.42	44	9.4828	4.6844	4.4992
KFUS93	20	12.96	23	31.1178	12.9546	11.8817
TRES92	23	7.75	27	13.2588	7.7278	7.4796
YORF83	21	34.84	28	49.5048	27.0744	26.3560

**Data set for Linear Penalty:**

Benchmark Data	Known Best Solution		Scheme -5 Largest Degree + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Largest Degree	After Kempe	After Pairswap
CARF92	32	3.74	32	6.7378	3.5418	3.4309
CARS91	35	4.42	34	7.4312	4.4167	4.3365
KFUS93	20	12.96	20	28.5556	11.2062	10.7975
TRES92	23	7.75	22	10.1201	6.8376	6.7372
YORF83	21	34.84	23	41.3773	24.5335	24.2742

Benchmark Data	Known Best Solution		Scheme -6 Saturation Degree + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Saturation Degree	After Kempe	After Pairswap
CARF92	32	3.74	29	6.4858	3.9994	3.9371
CARS91	35	4.42	30	7.7374	5.3017	5.2396
KFUS93	20	12.96	19	29.0241	13.2963	12.6020
TRES92	23	7.75	23	10.2513	6.4997	6.2971
YORF83	21	34.84	20	40.8459	29.0329	28.8735

Benchmark Data	Known Best Solution		Scheme -7 Largest Enrollment + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Largest Enrollment	After Kempe	After Pairswap
CARF92	32	3.74	34	6.7676	3.1054	3.0388
CARS91	35	4.42	36	8.8444	4.0408	3.9787
KFUS93	20	12.96	21	34.2987	10.4790	9.8182
TRES92	23	7.75	22	10.7368	6.8619	6.6607
YORF83	21	34.84	23	40.6504	24.5207	24.3294

Benchmark Data	Known Best Solution		Scheme -8 Random Ordering + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	Penalty		After Random Ordering	After Kempe	After Pairswap
CARF92	32	3.74	44	5.1111	2.1503	2.0534
CARS91	35	4.42	47	5.7356	2.7775	2.6838
KFUS93	20	12.96	25	22.3466	7.5430	6.9904
TRES92	23	7.75	29	7.8074	4.3264	4.1623
YORF83	21	34.84	28	31.2678	18.6823	18.2827