

CSE 318

ARTIFICIAL INTELLIGENCE SESSIONAL

Report

Offline on Local Search
(Scheduling Problem)

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Submitted by:

Razin Reaz Abedin

1805074

Level-3

Term-2

CSE-B1

Tables:

The schemes were run with **1000 Kempe chain interchanges** and **100000 pair swap attempts**.

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	10.615	5.833	5.1306
CARS91	35	4.42	35	11.495	7.300	6.5120
KFU93	20	12.96	20	46.516	17.604	15.5465
TRE92	23	7.75	23	15.900	10.413	9.9202
YOR83	21	34.84	23	64.688	38.802	37.6600

Benchmark data	Known best solution		Scheme 2 Largest Saturation + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	penalty		After Largest Saturation	After Kempe	After pairswap
CARF92	32	3.74	31	9.801	5.922	5.2425
CARS91	35	4.42	30	12.008	8.402	7.8395
KFU93	20	12.96	21	37.614	6.682	14.6912
TRE92	23	7.75	21	15.897	12.382	11.8599
YOR83	21	34.84	23	65.208	36.797	35.8544

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	35	10.696	5.565	4.7864
CARS91	35	4.42	36	13.781	7.042	6.2159
KFU93	20	12.96	21	54.512	16.918	14.9477
TRE92	23	7.75	22	16.329	11.093	10.2849
YOR83	21	34.84	25	63.271	33.834	32.4995

Benchmark data	Known best solution		Scheme 4 Random + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	penalty		After Random	After Kempe	After pairswap
CARF92	32	3.74	44	8.129	3.959	3.2175
CARS91	35	4.42	48	9.773	4.965	3.9165
KFU93	20	12.96	25	33.317	14.476	10.9065
TRE92	23	7.75	29	13.075	7.897	7.0117
YOR83	21	34.84	27	47.924	30.421	29.1158

Benchmark data	Known best solution		Scheme 5 (LINEAR PENALTY) LARGEST SATURATION + Kempe + Pairswap			
			Timeslots	Penalty		
	Timeslots	penalty		After Random	After Kempe	After pairswap
CARF92	32	3.74	31	6.1830	3.8929	3.7566
CARS91	35	4.42	30	7.7230	5.4879	5.4040
KFU93	20	12.96	21	24.4752	12.0871	11.5154
TRE92	23	7.75	21	10.1317	7.6522	7.4761
YOR83	21	34.84	23	41.9341	24.1467	23.9511