

Report Offline on Exam Scheduling using Local Search



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Tables:

- **Notes:**

1. Kemp-chain interchange and pairwise-swap operator has both been run 1000 times for reducing the penalties.
2. As the nodes were taken randomly for the perturbative heuristics, the penalties afterwards may approximate around the reported value.

Benchmark data	Known Best Solution		Scheme - 1 : LargestDegree + Kempe + Pairswap (Exponential)			
	Timeslots	Penalty	Timeslots	Penalty		
				After Constructive Heuristic	After Kempe	After Pairswap
CAR-F-92	32	3.74	32	10.391	5.823	5.233
CAR-S-91	35	4.42	35	11.955	6.981	6.436
KFU-S-93	20	12.96	20	46.617	19.247	17.620
TRE-S-92	23	7.75	22	15.951	11.151	10.51
YOR-F-83	21	34.84	23	65.647	38.684	37.611

Benchmark data	Known Best Solution		Scheme - 2 : DSatur + Kempe + Pairswap (Exponential)			
	Timeslots	Penalty	Timeslots	Penalty		
				After Constructive Heuristic	After Kempe	After Pairswap
CAR-F-92	32	3.74	29	9.971	6.431	6.062
CAR-S-91	35	4.42	32	12.446	7.640	7.063
KFU-S-93	20	12.96	19	47.186	20.31	18.64
TRE-S-92	23	7.75	23	16.220	10.50	10.02
YOR-F-83	21	34.84	22	60.700	40.68	40.36

Benchmark data	Known Best Solution		Scheme - 3 : LargestEnrollment + Kempe + Pairswap (Exponential)			
	Timeslots	Penalty	Timeslots	Penalty		
				After Constructive Heuristic	After Kempe	After Pairswap
CAR-F-92	32	3.74	35	10.696	5.275	4.672
CAR-S-91	35	4.42	36	13.780	6.674	6.173
KFU-S-93	20	12.96	21	54.512	17.008	16.067
TRE-S-92	23	7.75	22	16.322	10.644	10.189
YOR-F-83	21	34.84	25	63.271	33.841	32.406

Benchmark data	Known Best Solution		Scheme - 4 : Random + Kempe + Pairswap (Exponential)			
	Timeslots	Penalty	Timeslots	Penalty		
				After Constructive Heuristic	After Kempe	After Pairswap
CAR-F-92	32	3.74	43	7.908	3.867	3.450
CAR-S-91	35	4.42	47	9.774	5.167	4.470
KFU-S-93	20	12.96	26	35.109	13.246	10.690
TRE-S-92	23	7.75	29	12.524	7.770	7.094
YOR-F-83	21	34.84	27	51.543	31.783	30.158

Benchmark data	Known Best Solution		Scheme - 5 : LargestDegree + Kempe + Pairswap (Linear)			
	Timeslots	Penalty	Timeslots	Penalty		
				After Constructive Heuristic	After Kempe	After Pairswap
CAR-F-92	32	-	32	6.657	3.714	3.424
CAR-S-91	35	-	35	7.607	4.611	4.282
KFU-S-93	20	-	20	28.741	12.065	11.264
TRE-S-92	23	-	22	10.146	7.220	6.869
YOR-F-83	21	-	23	41.386	24.657	23.764