Topic for contest 2014 (Advanced Level)

1. Number Theory (Euler phi, sum of divisors, number of divisors, bigmod other elementary topics).
2. Graph Theory (Topological Sort,Djkstra,Floyd Warshall,MST etc).
3. Recursion and Backtracking.
4. Basic Geometry.

5. Advanced Dp(Digit Dp, Bitmask Dp, Node ordering, Bottom up Dp, row swapping technique).

1. Advanced Combinatorics,probability and expected value
2. Medium level geometry (Convex hull,Line Segment Intersection, Basic vector etc)
3. SCC/Bridge/Articulation Point/ BCC.
4. Nim/Sprague Grundy number(Basic)
5. Segment Tree/BIT/2D segment Tree(Basic)
6. Inclusion Exclusion
7. KMP/Trie
8. Max flow(Basic only)
9. LCA/Hashing
10. Greedy (LJ and codesforces).
11. Matrix Exponentiation
12. Ternary Search
13. Advanced Backtracking
14. Simulation
15. String Algorithms(Aho-corasick,suffix array,suffix automata).
16. Hard Geometry
17. Tree Dp
18. State compression Dp
19. IDA\* search
20. A\* search
21. 2- SAT.
22. Center of Tree.
23. FFT(Fast Fourier Transformation).
24. Directed MST.
25. Pick’s theorem.
26. Polard’s Rho Algorithm.
27. Burnside Lemma,Extended Euclid,Chinese remainder Theorem,Mobius function
28. Convex Hull trick (monotonus queue, monotonus stack,slope optimization).
29. Heavy Light Decomposition.
30. Stable marriage Problem.
31. Baby-step giant-step algorithm.
32. Bamboo-colon and fusion principle (green hackenbush).
33. Line sweeping technique in segment tree.
34. Gaussian Elimination (any variants).
35. Flow other variants (BPM,Hopcroft-karp, Mincost, Weighted Bipartite Matching, Hungarian Algortihm).
36. K-D tree.
37. Steinner tree.
38. 0-1 Fractional Programming.
39. Lagrange Multiplier.
40. Link cut tree.
41. Polygon Clipping.