

ABSTRACT

Travelling Salesman Problem, N-Queen Problem and Multiple Knapsack Problem are well known NP- Complete (NPC) and NP-Hard (NPH) problems. These problems have wide application area in science, engineering and in daily life. NPC and NPH problems cannot be solved in polynomial time using contemporary algorithms. Approximation and optimization techniques are applied to solve these types of problems to get the approximated results. In this research work, mutation and cross over operator is hybridized by applying greedy approaches in order to obtain the fast convergence of genetic algorithm. The quality of solution obtained through hybridization is superior as compared to other well-known techniques like ACO, PSO etc. The cross over and mutation GA operators are modified to implement the greedy approach in the proposed Greedy Genetic Algorithm (GGA). The proposed GGA improves the solution of TSP (path length) by 6%-19%, up to 16% profitable solution for multiple knapsack problems and also obtained N-Queen solution in reasonable good amount of time. Proposed GGA convergence rate is fast and quality of solution provided while solving NPC and NPH problems is found excellent.