Fitness Dependent Optimizer PPT Questions

* Optimization?

Executed iteratively by comparing various solutions till an optimum or a satisfactory solution is found

* Swarm intelligence?

Collective behaviour of decentralized, self-organized systems, natural or artificial.

Swarm Intelligence algorithm makes use of the data collected by every member in the group and takes a decision.

* Evolutionary computation?

family of algorithms for global optimization inspired by biological **evolution**, and the subfield of artificial intelligence and soft **computing** studying these algorithms.

* Metaheuristic algorithms?

Meta - denoting position behind, after, or beyond

Heuristic - to discover or learn something for themselves

Learning based on previous experience. It saves all the previous value computed and use it to predict new values.

* Fitness value?

how close a given design solution is to achieving the set aims.   
how much optimal is the current solution.

* Pace?

Velocity of movement from one feature set to another.

e.g. how far a point should be moved from the current position.

* Feature Set?

Parameters that are needed to find the solution.

e.g. If you want to find an optimal place for the construction of apartment. Latitude, Longitude, type of plain etc are parameters.

* Search Space, X?

Feature Set along with its range.

e.g. If you want to find an optimal place in Chennai for the construction of apartment. Chennai is bounded by a range of latitude and longitude. That’s the search space for that feature.

* Random number, r?

Number chosen from a pool of limited or unlimited numbers that has no discernible pattern for prediction.

Levy flight algorithm is chosen as random number generator algorithm. because it provides more stable

movements because of its good distribution curve

* Fitness weight?

We calculate new fitness weight every time when a point move. We use it to find the pace at which we have to move.

* Dimension?

Each element in a feature set is a dimension.

If you want to find an optimal place for the construction of apartment. Latitude is a dimension, Longitude is a dimension etc.,