Ques 2

Highly fit Schemata increase
and flourish in population according
to a geometric series.

$$\xi(S, t) = \xi(S, \emptyset)(1+\epsilon)^t$$
$$\text{where } \epsilon > \emptyset.$$

Effect of selection

$$\xi(S, t+1) = \xi(S, t)\frac{f_{av}}{\overline{F(t)}}$$

f_{av} = av. fitness of above
av. individuals.
$\overline{F(t)}$ = Total fitness.

Effect of crossover

$$\xi(S, t+1) = \xi(S, t)\frac{f_{av}}{\overline{F(t)}}\left[1 - \frac{P_c \delta(S)}{m-1}\right]$$

Effect of mutation

$$\xi(S, t+1) = \xi(S, t)\frac{f_{av}}{\overline{F(t)}}\left[1 - P_c\frac{\delta(S)}{m-1} - P_m \, O(S)\right].$$

— we use Crossover to increase

- we use crossover to increase variability in population
- we use mutation to escape local minimum.