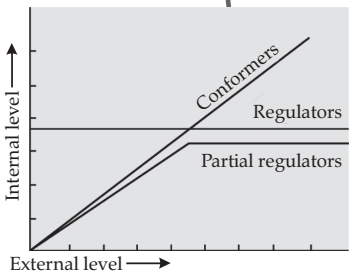
MIND MAP : LEARNING MADE SIMPLE

CHAPTER - 13

Organisms and Populations

Organisms and its Environment

- Major abiotic factors
  - Temperature
  - Water
  - Light
  - Soil
- Response to abiotic factors
  - Regulate
  - Conform
  - Migrate
  - Suspend
- Organismic response



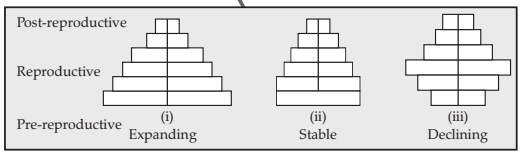
- Adaptations
  - Attribute of organism's morphological, physiological and behavioural changes that enables the organisms to survive and reproduce in its habitat.
    - Adaptation in kangaroo rat
      - Meeting water requirement by fat oxidation
      - Produce concentrate urine
    - Adaptation in Desert plant
      - Thick cuticle on leaf
      - CAM
      - No leaves
    - Adaptation in Mammals
      - Allen's rule
      - Thick layer of fat (as in seal)
    - Adaptation in Lizards
      - Absorb heat
      - Move into shade
    - Adaptation in High Altitude in humans
      - People suffer from mountain sickness
      - Relief occur due to acclimatization: Increasing breathing rate, increasing RBCs production.

Population Interaction

Species A	Species B	Name of Interaction
+	+	Mutualism
−	−	Competition
+	−	Predation
+	−	Parasitism
+	0	Commensalism
−	0	Ammensalism

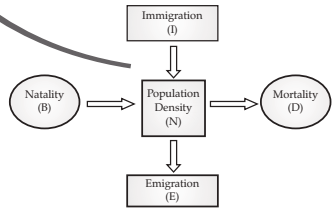
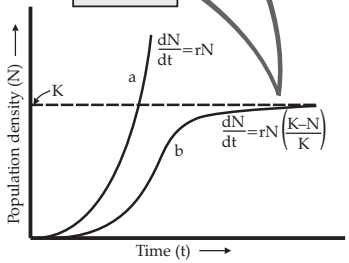
Population Attributes

- Population Size
- Natality rate
- Mortality rate
- Sex Ratio
- Age Pyramids



Population Growth

- Population Density
  - Natality
  - Mortality
  - Immigration
  - Emigration



- Popn. density eqn.
  - $N_{t+1}=N_t+[(B+I)-(D+E)]$
- Growth Models
  - Logistic Growth
    - $dN/dt=rN\left(\frac{K-N}{K}\right)$
  - Exponential Growth
    - $N_t=N_0e^{rt}$