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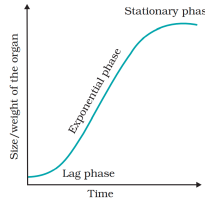
Class : 11th Biology
Chapter- 15 : Plant Growth and Development

Plant Growth and Development

Photoperiodism
- Day neutral plant Example- Tomato
- Long day plant Example- Radish, barley
- Short day plant Example- Chrysanthemum

Seed germination
- Root → Radicle
- Shoot → Plumule



Growth rate
Increase in growth per unit time.
- Arithmetic: $L_t = L_0 + rt$
- Geometric: $W_t = W_0 e^{rt}$

Phases of plant growth
- Meristematic
- Elongation
- Maturation

Absolute growth rate
Measurement and comparison of total growth per unit time.

Quantitative comparison between growth is done by

Relative growth rate
Growth of a particular system per unit time, expressed on a common basis.

Conditions of growth
- Water
- Oxygen
- Nutrients
- Optimum temperature
- Light
- Gravity

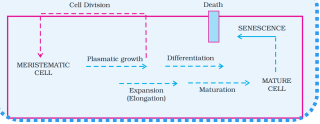
Rededifferentiation
Process in which dedifferentiated cells becomes mature again and lose their capacity to divide

Vernalisation
Promotion of flowering by a period of low temperature

Differentiation
Process in which cells produced by apical meristem become specialized to perform specific function

Plant growth regulators (Phytohormones)
- Auxin
- Gibberellin
- Cytokinin
- Ethylene
- ABA

Sequence of development processes



Dedifferentiation
Process in which, the living differentiated cells that by now have lost the capacity to divide, regain their capacity to divide under certain conditions.

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