

BOTANY

Sl. No	Name of chapter	Focus area
1.	Reproduction in organisms.	1.1. Asexual reproduction, 1.2.1.1. Gametogenesis, 1.2.2. Fertilisation.
2	Sexual reproduction in flowering plants.	2.2.1. Structure of microsporangium, Structure of pollen grain 2.2.2 Megasporangium-structure, megasporogenesis, Female gametophyte 2.2.3 Pollination-Classification based on source of pollen (autogamy, geitonogamy and xenogamy) and agents of pollination.(wind, water and insects -peculiarities with examples) and artificial hybridisation 2.3. Double fertilisation, 2.4.2. Embryo structure 2.4.3. False fruit, True fruit and Parthenocarpic fruit
3	Strategies for enhancement in food production.	9.1.1.1. Dairy farm management, 9.1.2 Animal breeding, 9.1.3. Bee keeping, 9.2 Plant breeding - main steps, 9.2.3. Plant breeding for improved food quality 9.3. S.C.P, 9.4. Tissue culture.
4	Biotechnology- Principles and processes.	11.2. Tools of recombinant DNA technology 11.2.1. Restriction enzymes, Gel electrophoresis. 11.2.2. Cloning vectors, 11.2.3. Competent host. 11.3. Processes of rDNA technology.

		11.3.3. Amplification of gene of interest using PCR, 11.3.5. Obtaining the foreign gene product.
5	Biotechnology and its applications.	12.1. Biotechnological applications in agriculture-Uses GMO's and Bt cotton 12.2.1. Genetically engineered insulin. 12.2.2. Gene therapy, 12.4. Ethical issues.
6	Organisms and Populations.	13.1.3. Adaptations -In organisms of deserts, polar regions and high altitudes. 13.2.1. Population attributes- Age pyramids and population density. 13.2.2. Population growth. (Up to population growth equation) 13.2.4. Population interactions – Parasitism, Commensalism and Mutualism.
7	Ecosystem.	14.2. Productivity 14.3. Decomposition 14.4. Energy flow -Food chain, Food web, Trophic levels and Ecological pyramids. 14.7. Nutrient cycling -Phosphorus cycle.
8	Environmental issues.	16.2. Water pollution and it's control BOD, Algal bloom and eutrophication. 16.6. Greenhouse effect and global warming. 16.7. Ozone depletion in the stratosphere. 16.9. Deforestation.

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