



**LEAD CITY UNIVERSITY, IBADAN.  
FACULTY OF BASIC MEDICAL & APPLIED SCIENCES  
DEPARTMENT OF BIOLOGICAL SCIENCES  
SECOND SEMESTER, 2018/2019 ACADEMIC SESSION**

**Course Title: PLANT REPRODUCTION**

**Course Code: BOT 413**

**Units: 2**

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**Section A:**

**Introduction:**

Plant reproduction in plants can be accomplished via either **sexual** or **asexual** mechanisms. Sexual reproduction produces offspring by the fusion of gametes, resulting in offspring genetically different from the parent or parents. Asexual reproduction produces new individuals without the fusion of gametes, genetically identical to the parent plants and each other, except when mutations occur. In seed plants, the offspring can be packaged in a protective seed, which is used as an agent of dispersal.

Plants have evolved different reproductive strategies for the continuation of their species. Some plants reproduce sexually, and others asexually, in contrast to animal species, which rely almost exclusively on sexual reproduction. Plant sexual reproduction usually depends on pollinating agents, while asexual reproduction is independent of these agents. Flowers are often the showiest or most strongly scented part of plants.

**Objectives (i)** To ensure students are able to describe the mechanism and process of reproduction in plants.

(ii) state some advantages of asexual reproduction in plants?

(iii) describe natural and artificial methods of asexual reproduction in plants.

(iv) to classify plants on the basis of flowering frequency?

**Course Description:** BOT 413 entails the general biology of Angiosperm.

## Teaching Plan

WEEK	CONTENT
1-2	Introduction to plant reproduction
3	Types of Reproduction
4	Asexual Reproduction
5	Sexual reproduction in Angiosperms: Ovule formation
6	Pollination and the Pollinators
7	Significance of plant reproductive strategies
8	Fertilization
9	Double fertilization
10-11	The seed embryo and fruits
12	Germination
13	Revision

### Course Requirement/Assessment:

Continuous Assessment Test	40%
Terminal Examination	60%
<b>Total</b>	<b>100%</b>

### Reading List:

Dutta T. C. (2010) Botany for Degree students 6<sup>th</sup> edition

Chittka, L., and J. D. Thomson, eds. *Cognitive Ecology of Pollination: Animal Behaviour and Floral Evolution*. New York: Cambridge University Press, 2001.

## TUTORIAL QUESTIONS

- 1a. Define the term "Parthenogenesis"
- b. Describe the process of binary fission.
- 2a. Briefly describe the term "Polyembryony" with examples.
- b. Explain the development of the embryo ( Embryogeny)
- 3a. Define the term reproduction
- b. Enumerate four forms asexual reproduction and discuss two with relevant examples.
- 4a. Outline four methods of artificial methods of propagation
- b. Explain two of the above listed methods with examples.
- 5a. Describe the process of fertilization in plants
- b. Outline five strategies which favours cross pollination
- c. Outline five differences between cross and self pollination
- 6a. Define the term pollination.
- b. State four pollinators and the various pollination strategies
7. Briefly explain reasons why pollinating agents exerted strong selection on all aspects of the flower, resulting in the evolution of tremendous floral diversity.
- 8a. State two advantages of outcrossers over selfers in their evolutionary potentials
- b. Outline three significance strategies in plant reproduction.
- 9(a) Describe the following terms: i. Fruit ii. Seediii. Testaiv. Epicotyl (b) State three parts of an embryo.
- 10a. Discuss the process of double fertilization in angiosperms.
- b. List two enzymes and two cell organelles which aid flexibility of pollen tube during sexual reproduction in angiosperms.