



**B.Sc. PLANT BIOLOGY & PLANT BIOTECHNOLOGY**

**PART IV b INTERDISCIPLINARY ELECTIVE  
PLANT - ANIMAL INTERACTION**

(Candidates admitted from the academic year 2008-2009)

## **PART IV b INTERDISCIPLINARY ELECTIVE PLANT - ANIMAL INTERACTION**

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### **Elective Theory**

#### **UNIT I**

Co-evolution of plant animal interaction through the ages.

#### **UNIT II**

Pollination: Flowers-unisexual, bisexual flowers.

Self and cross pollination.

Barriers that prevent self pollination in bisexual flowers.

#### **UNIT III**

Agents of pollination. Abiotic and biotic.

A brief account on biotic pollination of the following types.

Cantharophily - Beetles

Sapromycophily - Dung flies

Myophily - Syrphids-bee flies

Melitophily - Bees

Sphingophily - Hawkmoth

Phalcenophily - Small moth

Psycophily - Butterflies

Chiropterophily - Bat

Thrip pollination

#### **UNIT IV**

Buzz pollination; Pollination syndrome in *Ficus*, *Yucca*, and *Ophrys*.

#### **UNIT V**

Plant reward for pollinators.

Primary attractants: Pollen- Source, reserve.

Nectar- Nectary, FN, EFN, Chemical composition.

Oil

Wax

Perfume

Secondary attractants: Odour/ scent as means of attracting pollinators

Visual attractant – colour of flower.

#### UNIT VI

Floral modification or blossom types for pollination.

- Dish to bowl shaped blossom
- Bell to funnel shaped blossom
- Head to brush shaped blossom
- Gullet shaped blossom
- Flag shaped blossom
- Tube shaped blossom

Sticky pollen-pollen kit.

Pollen connecting threads-sporopollenin and non-sporopollenin.

Polyad, Pollinium.

#### UNIT VII

Fruit/ Seed dispersal

Zoochory- The role of animals in seed dispersal.

Dispersal through faeces, stickyness and their feet while trampling muddy soil.

Food - Wild fleshy fruit/ seed as source of food.

#### UNIT VIII

Defense – The role of secondary metabolites for defence mechanism in plants against predators.

Other protective agents like thorns, prickles, spines etc.

#### UNIT IX

Plant Galls – Gall producing insects. Simple and compound galls.

Structure of plant gall.

#### Suggested Reading

BARLT. F.G. 1985. Insect and Flowers. The Biology of a Partnership. George. Allen. Lunwin, London.

BENTLEY, B., AND T. ELIAS. 1983. The Biology of Nectaries. Columbia University Press, London.

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KAPIL, R.P. 1986. Pollination Biology. Inter India Publishers. New Delhi.

KEARNS, C. A., AND D. W. INOOYE. 1983. Techniques for pollination biologists. University of Colorado Press, USA.

OLIVER, F. W. 1903. The National history of plants. Vol II, III & IV. The Gregham Publishing Company, London.

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