

**DEPARTMENT OF BOTANY**

**Add-On course -Certificate in Medicinal Chemistry**

**(Medicinal Plants and Their Chemistry)**

**SESSION: 2020-21**

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**PAPER –I**

MAXIMUM MARKS : 50

NUMBER OF UNIT :V

MANIMUM MARKS : 17

**Unit I**

1. Diagnostic characters of Angiosperms
2. Classification of Angiosperm
  - a. Bentham & Hooker's system
  - b. Dahlgren's system
3. Morphology of vegetative parts of Angiosperms  
Structures, Types and Modifications of Root, Stem and Leaf
4. Morphology of floral parts of Angiosperms  
Elementary knowledge of Inflorescence, Flower, and Fruits

**Unit II**

1. Water - Properties and its biological significance
2. Important plant sources, structure classification and significance of following carbohydrates.  
Ribose, glucose, Sucrose, Starch, Cellulose

**Unit III**

1. Importance plant sources structure classification and their significance - Amino acids and Proteins
2. Enzymes - Introduction, Nature and structure of Enzymes, properties of Enzymes, Cofactors (Coenzymes, prosthetics groups and metal activators), nomenclature of enzyme, mode of enzyme action and their biological significance.

**Unit IV**

1. Introduction and history of medicinal chemistry.
2. Various system of medicine using plants with special reference to Ayurvedic system, Homeopathic system and Allopathic system.
3. Important plant sources, system due to deficiency or excess and significance of macronutrients and micronutrients.

## Unit V

Pharmacognosy and pharmacology of following plants:

1. *Allium cepa*- Pyaj
2. *Zingiber officinales*- Adrak
3. *Datura alba*- Datura
4. *Hibiscs rosa sinensis*- Gurhal
5. *Eclipta alba* - Bhringraj
6. *Plantago ovata*- Isapgol.

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**PAPER –II**

MAXIMUM MARKS: 50

NUMBER OF UNIT :V

MANIMUM MARK : 17

**Unit I**

1. Brief account of Medicinal plants
2. General account of Active principles of plants
3. General account of Alkaloids- occurrence, nomenclature, classification, isolation and properties of Alkaloids.

**Unit II**

➤ **Therapy by Fruits and Vegetables.**

Fruits rich in Vitamin C-

Lemon, Amla, Orange, Grapes, Pineapple, Tamarind, Bel, Mango, Papaya,

Vegetables rich in caroteroids-

Carrot, Turnip, Beetroot, Tomato, LalBhaji.

**Unit III**

➤ **Fruits rich in minerals and sugar-**

Date palm, Fig, Grapes, Jamun, Pomgranate, Guava, Banana, Bottleguard, Anjir, Bel

**Unit IV**

- **Vegetables rich in carbohydrates-** Potato, Sweet potato, Arbi, Tikhur, Singhara, Jimikand, **Salad-** Radish, Cucumber

## Unit V

➤ **Pharmacognosy and pharmacology of following plants :-**

1. *Boerhaavia diffusa*- Punarnova
2. *Cassia fistula*- Amaltas
3. *Oscimum sanctum*- Tulsi
4. *Piper longum*- Pipli
5. *Carum copticum* - Ajwain
6. *Sida cordifolia*- Bala