



## **UNIVERSITY OF CALCUTTA**

### **Notification No.CSR/35/2023**

It is notified for information of all concerned that in terms of the provisions of Section 54 of the Calcutta University Act, 1979, (as amended), and, in exercise of her powers under 9(6) of the said Act, the Vice-Chancellor has, by an order dated 25.08.2023 approved that the **IDC** paper in the Syllabus of **Botany** (CSR/13/23, dt. 12.07.2023), are replaced by "Plants around us", as the new IDC paper for both the Four-year Honours & Three-year MDC courses of studies in **Botany** Syllabus under CCF,2022, under this University, as laid down in the accompanying pamphlet.

**The above shall take effect from the academic session 2023-2024 and onwards.**

**SENATE HOUSE**

**Kolkata-700073**

**The 31<sup>st</sup> August, 2023**

A handwritten signature in black ink, followed by the date '31/8/2023' written in a similar style.

**Prof.(Dr.) Debasis Das**

**Registrar**

**IDC in BOTANY (To be opted in 1<sup>st</sup> or 2<sup>nd</sup> or 3<sup>rd</sup> semester)**

**PLANTS AROUND US (THEORY)**

**Total marks 50; Credits 2, Class 30 hours**

1. Introduction: 1.1 Introduction to plant groups: Algae, Bryophytes, Pteridophytes, Gymnosperms, Angiosperms (Monocot and Dicot); 1.2 Fungi -general characters; 1.3. Contributions of Theophrastus, Charak, Sushruta, Linnaeus, Mendel and J.C. Bose.  
(5 lectures)  
Plant body: 2.1 Plant cell and tissue; 2.2 Morphology of root, stem, leaf, flower, fruit and seed.  
(5 lectures)
2. Plants and ecosystem: 3.1 Phytodiversity and conservation; 3.2 Biodiversity hotspots of India; 3.3 Forest types in India; 3.4 Plant-based adaptations to climate change; 3.5 Concept of 'Carbon footprint'- role of plants in reducing carbon footprint.  
(5 lectures)
3. Plants and society: 4.1 Plants in day-to-day life (brief general information including uses)-major cereals (rice, wheat and maize); 4.2 pulses (mung and pea); 4.3 Oil (mustard and coconut); 4.4 Sugar (sugarcane and beet root); 4.5 Vegetables (potato, brinjal, ladies finger and spinach); 4.6 Fruits (apple, banana, guava, mango and jackfruit); 4.7 Beverages (tea, coffee, beer and wine); 4.8 Plants as timber (sal and teak); 4.9 Non-timber- energy (fossil and non-fossil), resin, honey and essential oil (lavender and citronella oil); 4.10 Fiber (jute and cotton); 4.11 Ornamental plants (rose, marigold, tuberose, gulmohar, jarul, kalanchoe); 4.12 Importance of bacteria (*Lactobacillus*, *E. coli* and *Rhizobium*) and Fungi (*Phytophthora*, *Agaricus* and *Penicillium*).  
(10 lectures)
4. Plants and human health: 5.1 Important medicinal plants and their uses- basak (*Justicia adhatoda*), ghritakumari (*Aloe vera*), cinchona (*Cinchona officinalis*), neem (*Azadirachta indica*), kalmegh (*Andrographis paniculata*), pudina (*Mentha arvensis*), tulsi (*Ocimum sanctum*), sarpagandha (*Rauvolfia serpentina*); 5.2 Plant-derived medicinal compounds and uses (Quinine, Reserpine, Vincristine, Curcumin, Gingerol).  
(5 lectures)

### PLANTS AROUND US (PRACTICAL)

Total marks 25; Credit 1, Class 30 hours

- |                                  |               |
|----------------------------------|---------------|
| 1. Workout: Dissection of flower | 2+4 = 6 marks |
| 2. Identification                | 3x3 = 9 marks |
| 3. Practical records/notebook    | 5 marks       |
| 4. Viva voce                     | 5 marks       |

Identification: Morphological study plant specimens

Microscopic study – *Nostoc*, *Oedogonium* (with oogonium), *Rhizopus*, *Penicillium* (sporangiophore).

Macroscopic study – *Agaricus* (fruit body), *Marchantia* with gemma cup, antheridiophore/archaeogoniophore, Moss sporophyte, *Pteris* (fertile leaf/pinna), *Pinus* – male and female cone.

Fruits of tomato, peas, cucumber, citrus, apple & banana.

Work out of flower: Floral parts of *Hibiscus rosa-sinensis*, *Clitoria ternatea* & *Datura metel*.

#### Textbook references:

1. Studies in Botany (vol-I)- J.N.Mitra, Debabrata Mitra & Salil Chowdhury (Moulik Library)
2. A Textbook of Botany (Vol. I)- G. Hait, K. Bhattacharya & A. K. Ghosh (New Central Book Agency)
3. Udvigyan (Vol-I) (Bengali)- S. Chowdhury, N. Datta, D. Mitra & J. Guha (Moulik Library)
4. College Botany (vol II)-H.C. Gangulee, A.K. Kar, S.C. Santra (New Central Book Agency)
5. Snatak Udvigyan (Semester I)- Dr. Jayanta Kumar Sikdar, Dr. Kunal Sen, Dr. Pranab Giri (Santra Publication)