**KARIM CITY COLLEGE, JAMSHEDPUR**

**DEPARTMENT OF BOTANY**

**SYALLABUS DISTRIBUTION**

**AS PER FYUGP, NEP -2022**

**MINOR SEMESTER V**

**SEMESTER - V Paper Title – Minor Paper – 1 (MN-1C)**

**CREDIT-04 [THEORY- 03 + PRACTICAL- 01]**

**Plant Anatomy &amp; Embryology**

**DR.AFTAB ALAM KHAN:**

**Course Outcomes: - At the end of the course the students will be able to:**

1. Understand the fundamental concepts of plant anatomy and embryology

2. Analyze and recognize the different organs of plant and secondary growth.

3. Examine the structure and functions of eco-system

 4. Evaluate the structural organization of flower and the process of pollination and fertilization.

**Full Mark - 60 Time: - 3 Hrs. 7 lectures**

**Unit I:**

Plant Tissues and Organs Root and shoot apical meristems; Simple and

complex tissues, Structure of dicot and monocot root stem and leaf.

**Unit II:**

Secondary Growth, Adaptive and Protective of Flower 15 lectures Vascular

cambium – structure and function, seasonal activity. Secondary growth in root

and stem, Wood (heartwood and sapwood). Adaptive and protective systems:

Epidermis, cuticle, stomata; General account of adaptations in xerophytes and

hydrophytes.

**DR.SHARMILA CHAKRABORTY:**

**Unit III: 15 LECTURES:**

Structural Organization of flower and fertilization Structure of anther and

pollen; Structure and types of ovules; Types of embryo sacs, organization and

ultrastructure of mature embryo sac. Pollination mechanisms and adaptations;

Double fertilization; Seed-structure appendages and dispersal mechanisms.

**Unit IV: 8 LECTURES:**

Embryo and Endosperm, Apomixes and Polyembryo 8 lectures Endosperm

types, structure and functions; Dicot and monocot embryo; Embryo-

endosperm relationship Definition, types and Practical applications of

apomixes and polyembryony.