

12. (a) Describe briefly the steps involved in pedigree method of breeding.

Or

(b) Describe the bulk method of breeding and its applications. What are its merits and demerits?

**(DBOT 04)**

M.Sc. (Previous) DEGREE EXAMINATION, DECEMBER 2007.

First Year

Botany

Paper IV — PLANT PHYSIOLOGY AND METABOLISM

Time : Three hours  
100 marks

Maximum :

Answer any FIVE questions from Section A.

Each question carries 8 marks.

Also answer ALL the questions from Section B.

Each question carries 15 marks.

SECTION A — ( $5 \times 8 = 40$  marks.)

1. Chemistry of Water.
2. Antitranspirants.
3. Cyanide Resistant Respiration.
4. RUBISCO.
5. Biochemistry of Nitrogen fixation.
6. Glyoxalate cycle.
7. Antigibberellins.
8. Vernalization.

SECTION B — ( $4 \times 15 = 60$  marks.)

9. (a) What is meant by water potential? Explain any two methods of measuring the components of water potential in plants.

Or

- (b) Explain the Current views on the mechanism of Stomatal opening and closing.

- 10 (a) Give an account on the recent advances in photochemistry of light with reference to Photosystem II.

Or

- (b) Write critical note on the Ultra structure of Mitochondria and discuss the mechanism of oxidative phosphorylation.

11 (a) Give brief mechanism of protein synthesis in Prokaryotes. How does it differ from Eukaryotes?

Or

(b) Explain briefly how fats are biosynthesised in plants.

12. (a) Give an account of physiological roles of Gibberellins along with their commercial applications.

Or

(b) Describe and critically evaluate the mechanisms underlying photoperiodic induction of flowering in plants.