



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours Part-III Examination, 2021

BOTANY

PAPER-VIII (REVISED NEW SYLLABUS)

Full Marks: 80

ASSIGNMENT

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

All symbols are of usual significance.

Answer any four questions from the following each within 600 words 20×4 = 80

1. Define Transpiration. Briefly explain the factors affecting Transpiration. Describe the mechanism of stomatal movement during Transpiration. Write down the significance of Transpiration. 20
2. Describe the organization of photosystems and explain how light energy is processed by such systems. Discuss the CO₂ fixation pathway in C₄ and CAM plants. How are these plants in advantage over C₃ plants? What is Warburg effect? 20
3. What are the different forms of nitrogen available to plants? Describe in detail the mechanism of nitrogen fixation in root nodules with special reference to the role of nitrogenase and leghemoglobin. Mention the role of major genes involved in this process. What is denitrification? 20
4. Define phytochrome. Discuss the structure, function and mode of action of phytochrome. List out the morphogenetic responses regulated by phytochromes in plants. 20
5. What is sampling? Why sampling is essential in biostatistics? Suppose in garden pea, yellow cotyledon colour is dominant to green and inflated pod shape is dominant to constricted form. Considering both these traits jointly in self-fertilized dihybrids, the progeny appeared as: 317 (Yellow, inflated), 109 (Yellow, constricted), 102 (Green, inflated) and 32 (Green, constricted). Do these genes assort independently? Support your answer using appropriate analysis. Write a note on goodness of fit. 20

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