



**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 6th Semester Examination, 2021

**CC13-BOTANY**

**PLANT METABOLISM**

Full Marks: 40

**ASSIGNMENT**

*The figures in the margin indicate full marks  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

**Answer any four of the following questions each within 300 words** 10×4 = 40

1. State the differences between C<sub>3</sub> and C<sub>4</sub> cycle. With suitable schematic diagram, give an outline of C<sub>4</sub> cycle. Why a C<sub>4</sub> plant is considered more efficient than a C<sub>3</sub> plant in terms of CO<sub>2</sub> fixation? 10
2. Write an essay on physiology and biochemistry of nitrogen fixation. 10
3. How glycolysis and TCA cycles are regulated? State the importance of pyruvate decarboxylase. 10
4. How many cycles of β oxidation are needed to cause complete breakdown of fatty acid? Where does the process of β oxidation occur? Describe the biochemical steps involved in the process of β oxidation. 10
5. Distinguish between: 10
  - (i) Oxidative phosphorylation and Photo-phosphorylation.
  - (ii) Photosystem I and photosystem II.

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