



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 6th Semester Examination, 2021



BOTACOR13T-BOTANY (CC13)

Time Allotted: 2 Hours

Full Marks: 40

*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.*

1. Answer **all** questions briefly from the following: 1×6 = 6
 - (a) What do you mean by anabolic pathway? Give an example.
 - (b) Name CO₂ acceptors in C₃ and C₄ plants.
 - (c) Mention the role of leghaemoglobin in nitrogen fixation.
 - (d) What is chemiosmotic theory?
 - (e) What are ligands?
 - (f) Write down the structure of triglyceride.

2. Answer any **eight** questions from the following: 3×8 =24
 - (a) Write a short note on Q cycle.
 - (b) Write the structure of chlorophyll b.
 - (c) "Photorespiration is necessary for all organisms performing oxygenic photosynthesis." — Justify the statement with reasons.
 - (d) Mention the difference between photophosphorylation and oxidative phosphorylation.
 - (e) Describe the biochemical reactions for conversion of Pyruvic acid to Acetyl-coA.
 - (f) State the significance of cyanide resistance respiration.
 - (g) What do you understand by Kranz anatomy? What are the advantages of C₄ photosynthesis? 2+1
 - (h) Schematically present the Z-scheme of photosynthetic light reaction.
 - (i) Write down the reaction catalysed by GS-GOGAT pathway.
 - (j) Discuss the significance of hexose monophosphate shunt.
 - (k) Schematically show the biochemical reactions of β oxidation of fatty acids.
 - (l) Schematically represent the Ca-calmodulin mediated signal transduction in plants.

3. Answer any *two* questions from the following:

5×2 =10

- (a) Write down the structure and function of the enzyme nitrogenase.
- (b) Briefly discuss the different types of phosphorylation found in plant metabolism.
- (c) Write down the structure and function of ATP synthase.
- (d) Discuss the role of trimeric G-protein in the cellular signal transduction.

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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