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 CO_2 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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