WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 6th Semester Examination, 2022

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 substrate level phosphorylation?

   (b) Write down the structure of ATP.

   (c) What are diazotrophs?

   (d) What is α-oxidation of fatty acids?

   (e) Define biosignalling.

   (f) Name one inhibitor of photosynthetic electron transport chain.

2. Answer any **eight** questions from the following: 3×8 = 24

   (a) What do you understand by chloroplast dimorphism in C_4 plants?

   (b) Briefly explain the process of sucrose synthesis.

   (c) Schematically represent Crassulacean acid metabolism.

   (d) Write a short note on mitochondrial electron transport chain.

   (e) State the dual role of RUBISCO.

   (f) Mention three important differences between C_4 and CAM plants.

   (g) Is glycolysis an oxidative process? If yes, then why?

   (h) In schematic form enumerate the oxidation of cytosolic $NADH^+ + H^+$ by malate aspartate shuttle.

   (i) Schematically show the biochemical reactions of triglyceride synthesis.

   (j) Write a note on chemiosmotic theory in relation to ATP synthesis.

   (k) Discuss the role of uncouplers in oxidative phosphorylation.

   (l) Write a note on the receptors involved in signal transduction pathway.

3. Answer any *two* questions from the following: 5×2 = 10

   (a) Give a schematic representation of C_3 cycle mentioning the enzymes involved in each step.

   (b) Write down three irreversible reactions taking place during glycolysis.

   (c) Discuss the infection process during nodule organogenesis in symbiotic nitrogen fixation with illustrations.

   (d) Write down a short note on MAPK cascade.

   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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