



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.*

———x———