



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 6th Semester Examination, 2022

CC13-BOTANY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1. Answer any **five** questions: 1×5 = 5
- (a) Name one CAM plant.
 - (b) What is metabolism?
 - (c) Define β -oxidation.
 - (d) Name one uncoupler of aerobic respiration.
 - (e) What is isozyme?
 - (f) Name the organelles involved in photorespiration.
 - (g) What is leghemoglobin?
 - (h) What is meant by anaplerotic reaction?

GROUP-B

2. Answer any **three** questions from the following: 5×3 = 15
- (a) Distinguish between— $2\frac{1}{2} + 2\frac{1}{2} = 5$
 - (i) PS-I and PS-II
 - (ii) Photophosphorylation and oxidative phosphorylation.
 - (b) Write short notes on— $2\frac{1}{2} + 2\frac{1}{2} = 5$
 - (i) nif gene
 - (ii) Kranz anatomy.
 - (c) Distinguish between— $2\frac{1}{2} + 2\frac{1}{2} = 5$
 - (i) C_3 cycle and C_4 cycle
 - (ii) Chlorophyll-a and chlorophyll-b.
 - (d) Briefly describe the process of gluconeogenesis. 5

(e) Write short notes on—

$$2\frac{1}{2} + 2\frac{1}{2} = 5$$

(i) ATP synthase

(ii) Factors affecting respiration.

GROUP-C

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

$$10 \times 2 = 20$$

(a) Write a note on the mechanism of biological nitrogen fixation.

$$10$$

(b) Discuss the characteristic features of signal transduction. Discuss the role of calcium-calmodulin in signal transduction process.

$$4 + 6 = 10$$

(c) Describe the process of oxidative pentose phosphate pathway.

$$10$$

(d) Describe the biochemical steps involved in β -oxidation. Add a short note on ω -oxidation.

$$7 + 3 = 10$$

—x—