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: $10\times2 = 20$

(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. $7+3 = 10$

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