



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 6th Semester Examination, 2023

**CC13-BOTANY**

**PLANT METABOLISM**

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) What is Anabolism? 1
- (b) What is secondary messenger? State one example of secondary messenger.  $\frac{1}{2} + \frac{1}{2}$
- (c) Name the main enzyme needed for nitrogen fixation. What kind of environment that enzyme prefer?  $\frac{1}{2} + \frac{1}{2}$
- (d) State the difference between saturated fatty acids and unsaturated fatty acids. 1
- (e) Name one enzyme involved in Cyanide resistant respiration. 1
- (f) Name one  $C_4$  plant. 1
- (g)  $F_0 - F_1$  ATP synthase — ' $F_0$ ' denotes for what? 1
- (h) What is denitrification? 1

**GROUP-B**

2. Answer any **three** questions from the following: 5×3 = 15
- (a) (i) What is feedback inhibition? 3+1+1
- (ii) Name one example of isozyme.
- (iii) What is Prosthetic group of an enzyme?
- (b) (i) State the role of accessory pigments in photosynthesis. 2+1+2
- (ii) Write the full form of RUBISCO and
- (iii) State its function in dark reaction of photosynthesis.
- (c) (i) What is alcoholic fermentation? 3+1+1
- (ii) Name the full form of HMP pathway.
- (iii) Which enzyme is regarded as pace-maker of Glycolysis?
- (d) What is substrate-level phosphorylation? What is Proton motive force in chemiosmotic mechanism?  $2\frac{1}{2} + 2\frac{1}{2}$
- (e) What is  $\omega$ -3 and  $\omega$ -6 fatty acids? What is Gluconeogenesis and mention its role briefly during seed germination? 2+1+2

**GROUP-C**

3. Answer any *two* questions from the following: 10×2 = 20
- (a) What is the full form of GS and GoGAT? Mention their role in transamination reaction. Name one bacteria involve in denitrification. 2+7+1
- (b) Write short notes on: 5+5
- (i) Q Cycle
- (ii) Z-Scheme model of Photosynthesis.
- (c) Write down only the irreversible steps of glycolysis. Diagrammatically represent the TCA Cycle. 3+7
- (d) Write down the biochemical process of Glyoxalate Cycle. What is Binding Change mechanism of ATP Synthesis? 6+4

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