

UG/5th Sem(H)/23/(CBCS)

2023

**BOTANY (Honours)**

Paper Code : BOTH DC-12

[Plant Metabolism]

Full Marks : 25

Time : Two Hours

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers*

*in their own words as far as practicable.*

1. Answer any *five* questions of the following :  $1 \times 5 = 5$

- (i) What are isozymes?
- (ii) What do you mean by 'Kranz Anatomy'?
- (iii) Name one saturated and one unsaturated fatty acid.
- (iv) Name two second messengers.
- (v) Define 'Oxidative phosphorylation'.
- (vi) What do you mean by cyanide-resistant respiration?
- (vii) Name two non-leguminous nitrogen fixing bacteria.
- (viii) What do you mean by Quantum Yield?

2. Answer any *four* questions of the following :  $3 \times 4 = 12$

- (i) State the significance of 'Photorespiration'.

( 2 )

- (ii) Describe the structure of ATP synthase.
  - (iii) Write down the characteristics of 'C<sub>4</sub>' plants.
  - (iv) Discuss  $\beta$ -oxidation of fatty acids with schematic representation.
  - (v) Describe pathways of ammonia assimilation in plants.
  - (vi) Explain the 'Jagendorf's Experiment in brief.
  - (vii) Discuss CO<sub>2</sub> fixation in CAM plants.
3. Answer any *one* question of the following :  $8 \times 1 = 8$
- (i) What do you mean by Red drop and Emerson enhancement effect? Describe the Z-scheme of Photosynthetic Electron transport.  $2+2+4$
  - (ii) Describe schematically the different steps of TCA cycle. Write a note on the amphibolic role of TCA cycle.  $6+2$

P.T.O.