

**U.G. 6th Semester Examination - 2021****BOTANY****Course Code : BBOTCCHC601****Course Title : Plant Metabolism**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** questions:  $1 \times 10 = 10$
- Define cofactor.
  - Mention the preparatory and pay off phase of glycolysis.
  - Difference between reductive amination and transamination.
  - What is Mitchel hypothesis?
  - Define allosteric enzyme.
  - Which mineral ion plays a role in photosystem II and what?

- The region of visible light, which is most useful for photosynthesis?
  - Where does DCMU act to inhibit photosynthesis?
  - Name first carbon acceptor in C<sub>4</sub> cycle.
  - What is Warburg effect?
  - Can NADH cross the outer mitochondrial membrane?
  - In signal transduction what are first messengers and second messengers?
  - What is NITRATE assimilation?
  - What are the breakdown products of triglycerides?
  - What happens in Glyoxylate Pathway?
2. Attempt any **five** questions:  $2 \times 5 = 10$
- What is PPP and what its significance?
  - Difference between competitive and non-competitive inhibition.
  - Differences between photorespiration and photophosphorylation.
  - Difference between C<sub>4</sub> and CAM pathway.

- e) What is gluconeogenesis and why is it important?
  - f) Why is the TCA cycle Amphibolic?
  - g) Mention the reaction where substrate level phosphorylation and oxidative photophosphorylation are occurring in respiration.
  - h) Diagrammatically represent the Z scheme of photosynthesis.
3. Attempt any **two** questions:  $5 \times 2 = 10$
- a) How is the TCA cycle regulated?
  - b) Mention schematically beta oxidation pathways.
  - c) Write down the breakdown of sucrose and starch breakdown integrated with glycolysis.
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