

B.Sc. Semester-VI Examination, 2022-23**BOTANY [Honours]**

Course ID : 61311 Course Code : SH/BOT/601/C-13

Course Title : Plant Metabolism

Time : 1 Hour 15 Minutes Full Marks : 25

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

1. Answer any **five** of the following: $1 \times 5 = 5$
- Mention the role of the enzyme nitrogenase.
 - Write down the chemical structure of a glucose molecule.
 - What are plastidial pigments?
 - Define isozymes with one example.
 - ATP acts as energy currency in biological system — Why?
 - What do you mean by anabolic metabolism?
 - Mention one role of Calcium calmodulin in signal transduction processes.
 - How synthesis of triglycerides takes place?

*[Turn Over]***UNIT-II**

2. Answer any **two** of the following questions: $5 \times 2 = 10$
- Explain the dual role of Rubisco with suitable example. What do you mean by C4 plants? $3+2$
 - Mention two major routes of ATP generation in plant system. Explain Boyers conformational model. $2+3$
 - Define photorespiration mentioning the subcellular particles where the reactions are operated.
 - Elucidate schematically the mechanism of glycolysis mentioning the important enzymes involved therein.

UNIT-III

3. Answer any **one** of the following question: $10 \times 1 = 10$
- Give a comparative account of cyclic and non-cyclic photophosphorylation. Write down the mechanism of light reaction in photosynthesis with special reference to schematic representation of 'Z-scheme'. $4+6$
 - What is respiration quotient? Write down the processes of starch synthesis (synthesis of amylose and amylopectin). How catabolism of starch takes place in plant system? $2+6+2$