

**THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2021
(Regular/Improvement/Supplementary)**

**BOTANY
FBOT3C07 - PLANT PHYSIOLOGY, METABOLISM AND BIOCHEMISTRY**

Time: Three Hours

Maximum Weightage: 30

Part A: All questions can be answered. Each carries *two* weightage (Ceiling 6 weightage).

1. What is GOGAT pathway?
2. Account the types of RNA molecules and explain the metabolic role of each in cells.
3. Write short notes on non-photosynthetic effects of light in plants.
4. Briefly explain the modern theories for stomatal mechanisms.
5. Explain SPAC and mention the role in Eco-Physiology.
6. "Rubber tapping is better in the early morning" critically evaluate.
7. Explain briefly the significance of Km value.

Part B: All questions can be answered. Each carries *four* weightage (Ceiling 12 weightage).

8. Explain Rancidity, Acid Number and Iodine number.
9. Give a brief note on the absorption of mineral ions and solutes in plants.
10. Give an account of translocation of xenobiotic compounds.
11. Describe Michaelis-Menton equation and its importance in plant biological activity.
12. Explain water oxidizing clock.
13. Explain anapleuortic reactions of citric acid cycle.
14. Critically evaluate the energy yield and energy balance sheet of citric acid cycle.

Part C: All questions can be answered. Each carries *six* weightage (Ceiling 12 weightage).

15. Give an account of the composition and functions of two photosystems and explain with charts the routes of electron flow during photosynthesis.
16. Explain the role of Mitochondria in ETC of a living cell.
17. What are lipids? Classify them based on the structure and functions.
18. Explain the biochemistry of nitrogen fixation and the export of fixed nitrogen.