

**GSQ/D-21**

**1076**

**PLANT PHYSIOLOGY  
(BOTANY)  
Paper-I**

Time : Three Hours]

[Maximum Marks : 40

**Note :** Attempt *five* Questions in all. Question No. 1 is Compulsory. Attempt *two* questions each from Sections. A & B. All questions carry equal Marks.

**Compulsory Question**

1. Explain/Define the following :
- (a) Define Imbibition.
  - (b) What is DPD?
  - (c) What do you mean by "Apoplast" way of Movement of Water?
  - (d) Why Guard Cells are not able to synthesize sugars?
  - (e) What is measured in a spectrophotometer?
  - (f) What do you understand by "Red Drop"?
  - (g) What is the role of Ubiquinones in Oxidative phosphorylation?
  - (h) Define Photoperiodism. (1×8=8)

**SECTION-A**

2. (a) Write a note on Plasmolysis and its significance. (4)
- (b) Describe the mechanism of Active Transport of Water by roots. (4)

3. What is transpiration? Explain various factors affecting Transpiration. What is the significance of transpiration for plants? (8)
4. (a) What are essential elements for plant nutrition? Distinguish between Macro-nutrients and Micro-nutrients. (4)  
(b) Write note on deficiency symptoms of Nitrogen and Phosphorus in plants. (4)
5. (a) What do you mean by Source and Sink? Explain Relationship between source and sink. (4)  
(b) Enlist various factors affecting Translocation of Organic solutes in plants. (4)

#### **SECTION-B**

6. (a) Distinguish Cyclic and Non-Cyclic Photophosphorylation. (4)  
(b) Draw a flow Diagram of Calvin Cycle. (4)
7. Explain the following :  
(a) Kranz Anatomy and its Significance for plants. (4)  
(b) Crassulacean Acid Metabolism and its significance. (4)
8. Give an outline of the processes involved in respiration and explain Glycolysis in detail. (8)
9. (a) What do you mean by Nastic Movements? Enlist various types of Nastic movements in plants. (4)  
(b) Explain various methods to break Seed Dormancy.(4)