

B.Sc. Semester - 6 (NEP-2020) Examination**March/April-2026****BOT: Plant Physiology (Major-15)****Time: 2:00 Hours****Marks: 50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Que.1(A) Answer in details (any one) (08)
1. Define transpiration and explain the mechanism of stomatal transpiration.
 2. Explain the major essential mineral elements required by plants. Describe the physiological roles and deficiency symptoms of major elements.
- Que.1(B) Answer in brief (Any One) (04)
1. Explain active absorption of water.
 2. Explain the root pressure theory of ascent of sap.
- Que.2(A) Answer in details (Any one) (09)
1. Describe the Mass Flow hypothesis of translocation of organic solutes with suitable diagrams and its significance.
 2. Discuss vernalization in plants and explain its agricultural importance with a suitable diagram.
- Que.2(B) Answer in brief. (any one) (04)
1. Differentiate between short-day plants and long-day plants.
 2. Discuss any four causes of seed dormancy.
- Que.3(A) Answer in details (any one) (08)
1. Explain the discovery of photosynthesis and the experiments that proved the role of light, chlorophyll, and CO₂.
 2. Describe the C₄ pathway with a diagram.
- Que.3(B) Answer in brief (Any One) (04)
1. Differentiate between photosynthesis and photorespiration.
 2. Write a note on: PS-II (Photosystem II).
- Que.4(A) Answer in detail (Any one) (09)
1. Describe the TCA (Krebs) cycle with a neat diagram, steps, energy yield, and significance.
 2. What is Respiratory Quotient (RQ)? Explain RQ values for carbohydrates, fats, and proteins.
- Que.4(B) Answer in Brief (Any One) (04)
1. Write the dephosphorylation reaction of glycolysis.
 2. Explain any four factors affecting the rate of respiration with a brief description of their effects.
