

Roll No. ....

Total Pages : 4

**11482/NH****CS/2111****PLANT PHYSIOLOGY**

Paper–IX

Semester–V

Time Allowed : 3 Hours] [Maximum Marks : 40

**Note :** The candidates are required to attempt **two** questions each from Sections A and B carrying 6 marks each and the entire Section C consisting of 8 short answer type questions carrying 2 marks each.

**SECTION—A**

1. Define ascent of sap. List the theories proposed for

its mechanism. Explain the most accepted theory for Ascent of sap. 6

2. What is Translocation? Explain the path and factors affecting translocation. 6

3. (a) Explain the role, deficiency and toxicity symptoms of phosphorus and magnesium. 3

(b) Describe the role of carriers and channels in mineral transport. 3

4. Write detailed note on enzyme nomenclature and enzyme inhibition. 6

**SECTION—B**

5. What is Photophosphorylation? Discuss the types, mechanisms and significance of photophosphorylation. 6

6. Define root nodule. Explain the mechanism of nodule formation and its role in nitrogen fixation. 6

7. (a) Elaborate the structure and functions of Sterols. 2½
- (b) Comment on composition of the electron transport chain. 3½
8. What is pentose phosphate pathway? Discuss its mechanism and significance. 6

### SECTION—C

9. Answer the following questions briefly :  $8 \times 2 = 16$
- (i) Differentiate between apoplastic and symplastic pathway.
- (ii) What is Water potential and DPD?
- (iii) Define apoenzyme and holoenzyme. Cite relevant examples.
- (iv) What are antitranspirants?
- (v) Elaborate the term TCA cycle.

- (vi) Comment on leaf anatomy in  $C_4$  plants.
- (vii) What do you mean by transamination?
- (viii) Comment on the fate of Beta ( $\beta$ ) oxidation of fatty acids.