B.Sc. (Honours) Examination, 2018
Semester-VI
Botany
Paper: BBC-63
(Plant Physiology & Biochemistry)

Time: 3 Hours **Full Marks: 40**

Questions are of value as indicated in the margin

1. Answer ***any eight*** of the following: 1×8=8
   i) What is root pressure?
   ii) How does humidity influence transpiration?
   iii) How does antenna pigment differ from reaction centre?
   iv) What is 'Acid growth hypothesis'?
   v) What is 'Pressure flow hypothesis'?
   vi) What is critical day length?
   vii) What is epimer? Give an example.
   viii) What is peptide bond?
   ix) Write the name of first fully sequenced protein. What is the chemical nature of Sanger reagent?
   x) What is hydrophobic interaction?
   xi) What is allosteric enzyme?
   xii) What is PUFA? Give an example.

Group-A (Plant Physiology)

Answer ***any two*** questions

2. Define water potential and mention its components. Discuss the mechanism of water uptake by plant roots mentioning the possible passages. 3+5=8
3. Describe the CO_2 fixation pathway of C_3 plants mentioning the enzymes involved in each step. Discuss how CO_2 concentrating mechanism works in C_4 and CAM plants. 5+3=8
4. Give a brief outline of GA biosynthesis in plants starting from its precursor. Enumerate the roles of GA and Ethylene in plant growth and development. 4+4=8

Group-B (Biochemistry)

Answer ***any two*** questions

5. Give an account of classification of amino acids on the basis of the properties of R group. What are the D and L configuration of amino acids? Classify proteins based on the shape of the protein molecules and mention briefly their functions. 3+2+3=8
6. Briefly describe the different types of enzyme inhibitions with suitable diagrams. Classify enzymes on the basis of type of reactions they catalyze. What is the steady state assumption? Deduce Michaelis-Menten equation. 3+2+1+2=8
7. Briefly describe fluid-mosaic model of plasma membrane with diagram. Why flip-flop movements are important for biological membrane? What are primary and secondary active transport? Discuss different types of secondary active transport with suitable diagrams. 3+1+2+2=8

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