

**Eastern University, Sri Lanka**  
**Faculty of Science**

**First Year First Semester Examination in Science 2016/2017 (Aug./Sep. 2018)**

**BT 102, Plant Physiology (Old Syllabus)**

**Time: 2 hours**

**Answer all the questions**

1. (a) Define the term "water potential" (20 marks)  
(b) Explain how water is transferred from soil to xylem in normal condition. (40 marks)  
(c) Write the importance of transpiration in plants (40 marks)
  
2. (a) Illustrate and label the typical structure of a stomata (30 marks)  
(b) List out different types of stomata with suitable illustrations and example (35 marks)  
(c) Write briefly the mechanism of  $K^+$  in stomatal movement (35 marks)
  
3. Briefly explain the followings  
(a) Mechanism of sugar translocation in plants (50 marks)  
(b) Cyclic and Non-cyclic Photophosphorylation in plants (50 marks)
  
4. Compare the following  
(a) Guttation and Transpiration (33 marks)  
(b) Apoplast and Symplast (33 marks)  
(c) Osmosis and Imbibition (34 marks)

**Total: (400/4) = 100 marks**