Eastern University, Sri Lanka

First Year First Semester Examination in Science 2003/2004 (November/December, 2004) (Proper)

BT 101, Cell Physiology

Answer All Questions **Time: 01 hr**

1. (a) Define the terms "Chemical potential" and "Water potential" of a solvent.
   (b) What are the components of water potential.
   (c) List all the methods that may be used to measure the components of water potential.
   (d) A typical flaccid plant cell is placed in a 0.11 M sucrose solution which has an osmotic potential of -0.25 MPa. What are the Ψ_p, Ψ_w and Ψ_s of that cell after equilibrium, if that flaccid cell had an osmotic potential of -0.73 MPa.

2. (i) Distinguish the following:
   (a) Diffusion and Imbibition
   (b) Isotonic solution and Hypertonic solution
   (c) Anomocytic type and Anisocytic type of stomata

   (ii) Briefly describe one of the methods of measuring stomatal size and list its advantages and limitations.