

EASTERN UNIVERSITY, SRI-LANKA
FOURTH YEAR SECOND SEMESTER EXAMINATION IN SCIENCE
(BOTANY)

2004 / 2005 (NOV / DEC 2006)

(April - 2007)

BT-424 - ECOPHYSIOLOGY

422

Answer All Questions

Time- 3 hrs

- 1) a) List five binomial names of "true mangroves" found in Batticaloa district and their uses by neighborhood. (10min.)
b) How true mangroves are different from associated mangroves? (07min.)
c) Give a detailed ecophysiological note on mangrove and its adaptations in saline environment. (13min.)
- 2) Write short notes on the following,
a) Redundancy in plants hydraulic pathways (07min.)
b) Ohm's law analogy in tree water movement (07min.)
c) Poiseuille's law (07min.)
d) Hydraulic limitation hypothesis (09min.)
- 3) Interpret the following statements,
a) "Root pressure is inadequate in refilling of xylem vessels" (07min.)
b) "Hydraulic constrictions, not only limit the water supply, but safe guard the primary plant body" (08min.)
c) "Root signals control the stomatal mechanisms" (07min.)
d) "Water stress limits the plant productivity through leaf photosynthesis" (08min.)
- 4) a) Write hydraulic architectural parameters (10min.)
b) Write briefly the root hydraulic architecture in terms of plant survival under different conditions. (20min.)
- 5) a) Define "stress in plants"? and distinguish the steady and dynamic stresses. (18min.)
b) Compare the advantages and disadvantages of using low pressure flow meter and high pressure flow meter in measuring hydraulic characteristics. (12min.)
- 6) a) What is xylem cavitation? and write on mechanisms of cavitation seeding in conduits. (18min.)
b) Compare in between risk-safety-efficiency vs. size of xylem conduits in water conduction. (12min.)