



KERALA AGRICULTURAL UNIVERSITY
B.Sc.(Hons) Forestry 2015 Admission
VI Semester Final Examination- July 2018

Tpbr. 3209

Forest Ecophysiology (2 +1)

Marks: 50

Time: 2 hours

I State True or False (10x1=10)

- 1 Day length influences phenological responses in trees
- 2 In a closed forest canopy the ultra violet type of radiation reaches the ground floor
- 3 The number of essential nutrients in plants as described by Arnon is 18.
- 4 The tropical rainforest have the highest NPP
- 5 A drought avoidance type plant does not maintain favourable tissue water content.
- 6 The movement of malate from mesophyll to bundle sheath in the C₄ cycle occurs through plasmodesmata
- 7 Plants those are able to grow in the presence of high salts are called Xerophytes
- 8 The present climate change scenario will have a severe impact on reproductive phenology.
- 9 Osmotic potential is due to the presence of solute particle in the cell
- 10 Sucrose is the main form of carbon found in the phloem

II Answer any FIVE of the following (5x2=10)

- 1 Why "Transpiration is a necessary evil" for ecosystem productivity.
- 2 Leaf Area Index
- 3 Enlist the essential macro and micro nutrients of plants and describe the Arnon's criteria of essentiality.
- 4 How does chilling injury physiologically effect tropical plants and what is their adaptive mechanism.
- 5 Explain the dry matter production and partitioning mechanism in forests.
- 6 How do trees respond to lower soil moisture levels?
- 7 Shade tolerant trees.

III Answer any FIVE of the following. (5x4=20)

- 1 Concept of Water Use Efficiency
- 2 Relationship between canopy architecture and radiation.
- 3 Salt tolerance mechanism in mangroves
- 4 The C₃ mechanism of photosynthesis observed in tropical trees.
- 5 Evapotranspiration of forest stands.
- 6 Carbon allocation with respect to source sink complexity.
- 7 How do wind effects trees in forest stands.

IV Write an essay on any ONE of the following (1x10=10)

- 1 Water uptake from the soil
- 2 Uptake of radiation by plants
