



KERALA AGRICULTURAL UNIVERSITY
B.Sc.(Hons.)Forestry 2017 Admission
III Semester Final Examination-January 2019

Fbti.2105

TREE IMPROVEMENT (2+1)

Marks: 50
Time: 2 hours

I Fill in the blanks (10x1=10)

- 1 The vegetative offspring of an ortet is commonly called _____.
- 2 Emasculation is a process in which _____ part of flowers are removed.
- 3 Genetic gain is influenced by intensity of selection, _____ and phenotypic standard deviation.

Choose the correct answer

- 4 Sampling phenomenon in which the gene frequencies in the progeny populations deviate by chance from those found in the parent
a) Selection b) Mutation c) gene migration d) Genetic drift
- 5 To obtain higher gain we make special crosses when character is controlled by
a) Non additive genes b) Additive genes c) Pleiotropic genes d) None of these

Write True or False against each statement

- 6 Planting distance is more in clonal seed orchard.
- 7 An exotic tree is grown outside the natural range of the species.
- 8 Full sib progeny having one parent known
- 9 A measurable character of an organism is known as qualitative trait.
- 10 Heterogeneous population has all individual with same genotypes

II Write Short notes on any FIVE of the following (5x2=10)

- 1 Phenotypic expression of trees
- 2 Genetic consequences of hybridization
- 3 Ecotype and clines
- 4 Importance of vegetative propagation in tree improvement
- 5 Progeny testing
- 6 Tandem Selection
- 7 Over dominance hypothesis of heterosis

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

- 1 Explain the term DUS. Describe its importance. Name Indian tree species in which DUS guidelines has been prepared.
- 2 Genetic basis of inheritance.
- 3 Self-incompatibility- its significance and types that occurs in forest trees.
- 4 Different natural forces (factors) responsible for variation.
- 5 Different methods of breeding for disease resistance.
- 6 Elite tree and its different from plus tree. Describe plus tree selection method in plantation?
- 7 Special problems in tree improvement.

IV Answer any ONE of the following (1x10=10)

- 1 Seed orchard and different types of seed orchards with their merits and demerits.
- 2 PROVENANCE and its differences from Seed Source.
Importance of provenance testing and describe its various phases.
