

SH-III/FB/2103/19

B.Sc. 3rd Semester (Honours) Examination, 2019-20**FORESTRY****Course ID : FB2103****Course Code : SH-FB-2103**

Course Title : Tree Improvement

Time: 2 Hours**Full Marks: 50***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Write a definition or short answer of *any ten* of the following: 1×10=10
- (a) What is phenotype?
 - (b) What do you mean by anthesis?
 - (c) What is geitonogamy?
 - (d) What is hybridism?
 - (e) What do you mean by progeny trial?
 - (f) Damping off diseases occur due to _____ in nursery.
 - (g) SAP stands for.
 - (h) What is called molecular glue?
 - (i) Name one exotic plant introduced to India from Australia.
 - (j) Write down the genomic constitution of Trisomic and Triploid.
 - (k) Name one widely used plasmid vector in tree breeding.
 - (l) What is back cross?
 - (m) What is totipotency?
 - (n) Mention the minimum size for seed production area.
 - (o) Why square stand is favorable for SAP rather than linear block?
2. Write short note/ define *any ten* of the following: 2×10=20
- (a) What do you mean by heritability?
 - (b) What does plus tree mean?
 - (c) What is recurrent selection?
 - (d) Importance of selection of trees for seed collection.
 - (e) Define breeding depression.
 - (f) What is geographic variation?
 - (g) What is meant by in genetic gain?

- (h) What do you mean by gene pool?
- (i) What is meant by biodiversity?
- (j) What is genetic drift?
- (k) What is Mutation?
- (l) Why vector is used in molecular cloning?
- (m) What is artificial seed?
- (n) Why meristem are used chiefly in tissue culture?
- (o) Why polyploidy species can withstand mutational stress?

3. Write down on brief *any four* of the following: 5×4=20
- (a) Why emasculation is necessary? Describe different types of emasculation process for hybridization. 2+3=5
 - (b) What is seed production area? How SAP can be development from existing planted stands? 1+4=5
 - (c) How knowledge of biotechnology can be deployed for tree improvement?
 - (d) Give an idea of in-vitro propagation of forest tree species.
 - (e) Why selection of seed orchards is important for seed collection? Explain different criteria for seed orchards selection. 2+3=5
 - (f) What is pollination? Discuss on brief their importance in tree breeding.
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