

M.Sc. (Ag.) Examination, 2016
Semester-I
Subject: Genetics and Plant Breeding
Course No.: GPB-503
(Principles of Plant Breeding)

Time: Three Hours

Full Marks: 50

Questions are of value as indicated in the margin

Answer any four questions of which Question No. 6 is compulsory

1. What do you mean by Plant Breeding? Discuss the various objectives of plant breeding? Comment on the multidisciplinary nature of plant breeding? 2+7+3=12
 2. Briefly discuss the concept of centres of origin. In what way is this idea helpful in plant breeding? Enlist the Vavilovian centres of origin with one important example of each. 2+6+4=12
 3. Explain the mechanisms of self-incompatibility and their biochemical basis. Differentiate gametophytic and sporophytic system of self-incompatibility. How can CGMS be utilized in plant breeding? 4+4+5=12
 4. Compare mass selection and pureline selection. Describe the procedure of pedigree selection with flow chart. 6+6=12
 5. What is the role of artificial and natural selection in bulk breeding method? Explain simple recurrent selection. 6+6=12
 6. Write short notes (**any seven**) : 2×7==14
 - a. Plant introduction
 - b. Multiline method
 - c. Heterosis
 - d. Synthetic variety
 - e. Composite variety
 - f. Apomixis
 - g. TGMS
 - h. Plant ideotype
 - i. Mutation breeding
 - j. Protection of plant variety and farmers' rights
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