

KERALA AGRICULTURAL UNIVERSITY
B.Sc (Hons.) Agriculture - 2008 Admission – IIIrd Semester
Final Examination – January–February 2010

Title : Pbgp 2103

Marks: 80

Course : Principles of Plant Breeding (2+1)

Time: 3 hours

I.(a) Fill in the blanks:

(10 x 1 = 10)

1. Progeny descended by mitosis from a single plant is known as _____.
2. Movement of individuals from one population into another is known as _____.
3. A record of ancestry is _____.
4. The term recurrent selection was coined by _____.
5. Development of embryo from synergids or antipodal cells of embryo sac is called _____.

I.(b) State True or False:

6. Random mating is useful in development of synthetics and composites.
7. Purification of existing pureline varieties can be done by mass selection.
8. Back cross method is not applicable to cross pollinated crops.
9. Mixture of several purelines are known as composites.
10. Varalaxmi was the first interspecific hybrid variety released in cotton.

II. Write short notes on ANY TEN:

(10 x 3 = 30)

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|---------------------------------------|-----------------------------------|
| 1. Anther culture | 7. Dwarfing genes in crop plants |
| 2. Characteristic features of a Clone | 8. Variations in pureline |
| 3. Single seed descent method | 9. Random drift |
| 4. GCA and SCA | 10. Merits of multiline varieties |
| 5. Pedigree record | 11. Allopolyploidy |
| 6. Hardy Weinberg Law | 12. Chemical mutagens |

III. Write short essays on ANY SIX:

(6 x 5 = 30)

1. Write about the different male sterility systems available in crop plants with suitable examples.
2. Write the difference between auto polyploids and allopolyploids in production, breeding and morphological characters with examples.
3. What is recurrent selection? Write about the different types of recurrent selection followed.
4. Write about the genetic basis of self pollinated crops and explain Johannson's pureline theory with example.
5. Write an essay about the applications of self incompatibility in crop improvement.
6. Discuss about the bulk method of breeding, its merits and demerits.
7. Compare and contrast between inbred and variety.
8. Distinguish between Heterosis and inbreeding.

IV. Write essay on ANY ONE:

(1 x 10 = 10)

1. Write an essay on mutation breeding. Explain the mutagens and handling the mutagenic populations.
2. Write an essay on wide hybridization with examples. Write its significance in crop improvement.