Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **18AG2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PRINCIPLES OF PLANT BREEDING** | **Max. Marks :** | **100** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (20 X 1 = 20 MARKS)** | | | |
| 1. | What is the first intergeneric cross hybrid called? | CO1 | 1 |
| 2. | Who coined the term heterosis? | CO2 | 1 |
| 3. | A homozygous population includes (a) Pure lines (b) Inbred lines (c) Multilines  (d) Mass selected varieties in autogamous crops (e) All of the above | CO1 | 1 |
| 4. | A heterogeneous population includes (a) Land races (b) Multilines (c) Synthetics  (d) Composites (e) All of the above | CO1 | 1 |
| 5. | The adaptation of an introduced variety to the new environment is called as \_\_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 6. | The mode of expression of genes in a genetic population is referred to \_\_\_\_\_\_\_\_\_\_\_\_\_. | CO1 | 1 |
| 7. | What is the sum total of genes in a species called? | CO1 | 1 |
| 8. | What is the mode of pollination in sunn hemp? | CO1 | 1 |
| 9. | Name the central agency that functions for the export and introduction of germplasm of economic importance. | CO1 | 1 |
| 10. | What is the hybrid progeny between a single cross and an open pollinated variety called? | CO2 | 1 |
| 11. | The degree of inbreeding is measured by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 12. | Farmers’ rights are also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | CO3 | 1 |
| 13. | The Protection of Plant Varieties and the Farmers’ Rights Act (PPVFR) was enacted in the year \_\_\_\_\_\_\_\_\_\_\_\_\_. | CO3 | 1 |
| 14. | A synthetic variety requires reconstitution after how many years? | CO2 | 1 |
| 15. | Superiority of F1 hybrid over the standard popular variety of a region is also called \_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 16. | Name the chemical used for developing doubled haploids. | CO2 | 1 |
| 17. | Progeny of a self pollinated homozygous plant obtained by selfing is called \_\_\_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 18. | Small areas within the centre of diversity which exhibit tremendous genetic variability of crop plants are named as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | CO1 | 1 |
| 19. | What is the record of the ancestry of an individual selected plant for its various generations called? | CO2 | 1 |
| 20. | The formula for narrow sense heritability is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | CO1 | 1 |

|  |  |  |  |
| --- | --- | --- | --- |
| **PART – B (10 X 5 = 50 MARKS)**  **(Answer any 10 from the following)** | | | |
| 21. | Summarize the objectives and the significant achievements of plant breeding. | CO1 | 5 |
| 22. | Explain the types of asexual reproduction. | CO1 | 5 |
| 23. | Illustrate different systems of self incompatibility and explain how these systems operate in plants? | CO1 | 5 |
| 24. | Interpret the components of genetic variance. | CO1 | 5 |
| 25. | Classify various centres of origin of cultivated plants and some important plants that originated in them. | CO1 | 5 |
| 26. | Analyze the genetic basis of heterosis and describe the ways to fix heterosis. | CO2 | 5 |
| 27. | List the types of mutation and briefly give the procedure for mutation breeding. | CO2 | 5 |
| 28. | Demonstrate the different types of polyploids and their role in crop improvement with specific examples. | CO2 | 5 |
| 29. | Outline the DNA markers and relate the marker assisted selection in crop improvement. | CO2 | 5 |
| 30. | Explain the Intellectual Property Rights (IPR) with examples. | CO3 | 5 |
| 31. | List out the types of hybrid and the steps to develop hybrid varieties. | CO2 | 5 |
| 32. | Explain participatory plant breeding. | CO3 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PART - C (2 X 15 = 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
| 33. | a. | Categorize the types of male sterility found in crop plants and describe with suitable illustrations. | CO1 | 8 |
| b. | Demonstrate the procedure for backcross breeding and multiline breeding. | CO2 | 7 |
|  |  |  |  |  |
| 34. | a. | Examine the types of recurrent selection schemes used in population improvement with their breeding procedure. | CO2 | 8 |
| b. | Summarize the breeding methods in asexually propagated crops. | CO2 | 7 |
|  |  |  |  |  |
| 35. | a. | Discover the breeding approaches used for abiotic stress resistance in plants and write briefly on their practical achievements. | CO2 | 8 |
| b. | Examine the genetics and sources of resistance for diseases and insect pests in crops. | CO2 | 7 |