17953

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – B.Sc.(Ag)-Hons-2024
Course Name – Fundamentals of Plant Breeding
Course Code - CC-BAG372 (T)
(Semester III)

Full Marks : 50 **Time : 2:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 20=20

1. *Choose the correct alternative from the following :*

(i) Identify the number of center of origin were proposed by Vavilov initially.
a) 8 b) 9
c) 10 d) 11

(ii) Identify what does self pollination in a population increase.
a) Homozygosity b) Heterozygosity
c) Homogeneity d) Heterogeneity

(iii) Identify the generation where Heterosis is often observed:
a) F1 b) F2
c) F3 d) P

(iv) Identify who gave Over Dominance hypothesis.
a) Mather b) East and Shull
c) Davenport d) Johanssen

(v) Identify which of the following mutagen is non ionizing in nature.
a) X-Ray b) Gamma rays
c) UV rays d) alpha rays

(vi) Identify the term given to superior individuals selected of in a segregating generation called.
a) Heterosis b) Heterobeltiosis
c) Transgressive segregants d) none of these

(vii) Identify the breeding method which is also known as Evolutionary method of Plant Breeding.
a) Bulk Method b) Pedigree Method
c) Backcross method d) Single seed decent method

(viii) Explain the process for hardening a plant to changed climate?

a) Acclimatisation
b) Adaptation
c) Introduction
d) Domestication

(ix) Infer what domestication leads to.

a) decrease in fitness
b) increase in fitness
c) Domestication is not related with fitness
d) Increase diversity

(x) Identify from which generation onwards, selection can be practiced.

a) F1
b) F2
c) F3
d) F4

(xi) Identify the measure of Specific Combining Ability.

a) Dominance Genetic variance
b) Additive Genetic Variance
c) Epistatic genetic variance
d) Dominace X Dominance variance

(xii) Identify the reason for cross pollination in bajra.

a) Complete flower
b) Protandry
c) Protogyny
d) dioeci

(xiii) Infer who proposed the Law of Homologous Series of Variation.

a) Vavilov
b) Johanssen
c) Bateson
d) Mendel

(xiv) Infer the ex situ germplasm conservation method used to store for long period of time.

a) Working collection
b) Base collection
c) Active collection
d) Field gene bank

(xv) Infer the storing method used for storing recalcitrant seeds.

a) Working collection
b) Base collection
c) Active collection
d) Field gene bank

(xvi) Identify the term reffred to the selfed progeny of a cross pollinated crop.

a) Inbred
b) Hybrid
c) Cybrids
d) Open pollinated varieties

(xvii) Interpret what is the square root of variance called?

a) Standard deviation
b) Heritability
c) Genetic advance
d) None of these

(xviii) Identify the method is used for Purification and Maintenance of Pureline varieties.

a) Pureline
b) Mass selection
c) Pedigree selection
d) Bulk selection

(xix) Relate which of the following is a farmer variety.

a) Obsolete variety
b) Landraces
c) Mutant line
d) Breeding lines

(xx) Examine the chromosome number of endosperm of wheat.

a) 42
b) 21
c) 63
d) 14

Group-B

(Short Answer Type Questions) 2.5 x 10=25

2. Indicate the A line, B line and R line in three line breeding system. (2.5)
3. Identify the different kinds of germplasm of a crop species. (2.5)
4. Identify the undesirable consequences of plant breeding. (2.5)
5. Identify the major difference in breeding approach for self pollinated crops and cross pollinated crops. (2.5)
6. Interpret Apogamy. (2.5)
7. Interpret Semigamy. (2.5)

8. Explain male sterility. (2.5)
9. Illustrate the procedure of Plant Introduction. (2.5)
10. Elaborate the Evolutionary method of plant breeding. (2.5)
11. Develop a breeding method involving Pure line selection. (2.5)

OR

Elaborate Sporophytic Self-Incompatibility. (2.5)

Group-C

(Long Answer Type Questions) 5 x 1=5

12. Elaborate one breeding method for self pollinated crop which is based on exploitation of existing variability in a population. (5)

OR

Elaborate one breeding method for self pollinated crop which is based on creation of variability in a population. (5)

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