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6 SEM TDC DSE BOT (CBCS) 1 (H)

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(June/July)

BOTANY

(Discipline Specific Elective)

(For Honours)

Paper : DSE-1

(**Plant Breeding**)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions.*

1. (a) Choose the correct answer of the following : 1×3=3
- (i) The offspring from a cross between two individuals differing in at least one set of characters is called
- (1) polyploids
 - (2) hybrid
 - (3) mutant
 - (4) variant

(2)

(ii) Hand emasculation is generally recommended in crops with

- (1) very small flower
- (2) large flower
- (3) monocious condition
- (4) dioecious condition

(iii) A cross between a heterozygous individual with a homozygous recessive parent is known as

- (1) monohybrid cross
- (2) dihybrid cross
- (3) test cross
- (4) backcross

(b) Fill in the blanks : $1 \times 2 = 2$

(i) The cross of a hybrid of either of the parent-type is known as _____.

(ii) The process of bringing wild species under human management is referred to as _____.

2. Write short notes on the following : $3 \times 4 = 12$

- (a) Genetic erosion
- (b) Centres of origin
- (c) Germplasm
- (d) Polyploidy

(3)

3. Write explanatory notes on any *two* of the following : $6 \times 2 = 12$

(a) Role of biotechnology in crop improvement

(b) Important achievement of plant breeding in India

(c) Acclimatization

(d) Domestication

4. Define 'hybridization' and state its objectives. Discuss briefly the different steps of hybridization procedure and mention its limitations. $1 + 2 + 7 + 2 = 12$

Or

Define inbreeding depression and hybrid vigour. How does this phenomenon affect the self- and cross-pollinated species? Explain with the help of suitable example.

$3 + 2 + 7 = 12$

5. What is quantitative inheritance? Give a detailed account of quantitative inheritance with special reference to Kernel colour in wheat. $2 + 10 = 12$

(4)

Or

Write notes on the following :

4×3=12

- (a) Mutation breeding
- (b) Distant hybridization
- (c) Importance of transgenic plants in crop improvement
